bürkert
FLUID CONTROL SYSTEMS

Types 8025 / 8035

Flowmeter
Durchflussmessgerät
Débitmètre

Operating Instructions

Bedienungsanleitung
Manuel d'utilisation

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Technische Änderungen vorbehalten.
Sous réserve de modifications techniques.

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1. ABOUT THIS MANUAL

This manual describes the entire life cycle of the device. Please keep this manual in a safe place, accessible to all users and any new owners.

This manual contains important safety information.

Failure to comply with these instructions can lead to hazardous situations.

- This manual must be read and understood.

1.1. Symbols used

DANGER

Warns against an imminent danger.

- Failure to observe this warning can result in death or in serious injury.

WARNING

Warns against a potentially dangerous situation.

- Failure to observe this warning can result in serious injury or even death.

ATTENTION

Warns against a possible risk.

- Failure to observe this warning can result in substantial or minor injuries.

NOTE

Warns against material damage.

- Failure to observe this warning may result in damage to the device or system.

Indicates additional information, advice or important recommendations.

Refers to information contained in this manual or in other documents.

→ Indicates a procedure to be carried out.

1.2. Definition of the word "device"

The word "device" used within this manual always refers to the flowmeter type 8025 or 8035.

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2. INTENDED USE

Use of the device that does not comply with the instructions could present risks to people, nearby installations and the environment.

- The compact version of the flowmeter type 8025 or 8035 is designed to measure the flow rate of a liquid and to totalise the volume of a liquid.
- The remote version of the flowmeter type 8025 is a transmitter that must be connected to an 8020 or an 8030 flow sensor with a sinus or a pulse output, only in "Low Power" version.
- This device must be protected against electromagnetic interference, ultraviolet rays and, when installed outdoors, the effects of climatic conditions.
- This device must be used in compliance with the characteristics and commissioning and use conditions specified in the contractual documents and in the operating instructions.
- Requirements for the safe and proper operation of the device are proper transport, storage and installation, as well as careful operation and maintenance.
- Only use the device as intended.

→ Observe any existing restraints when the device is exported.

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3. BASIC SAFETY INFORMATION

This safety information does not take into account:

- any contingencies or occurences that may arise during installation, use and maintenance of the devices.
- the local safety regulations for which the operating company is responsible including the staff in charge of installation and maintenance.

Danger due to electrical voltage.

- Shut down the electrical power source of all the conductors and isolate it before carrying out work on the system.
- Observe all applicable accident protection and safety regulations for electrical equipment.

Risk of injury due to high pressure in the installation.

- Stop the circulation of fluid, cut off the pressure and drain the pipe before loosening the process connections.

Risk of injury due to high fluid temperatures.

- Use safety gloves to handle the device.
- Stop the circulation of fluid and drain the pipe before loosening the process connections.

Risk of injury due to the nature of the fluid.

- Respect the prevailing regulations on accident prevention and safety relating to the use of hazardous products.

Various dangerous situations

To avoid injury take care:

- not to use the device in explosive atmospheres.
- not to use the device in an environment incompatible with the materials it is made of.
- not to use the device for the measurement of gas flow rates.
- not to subject the device to mechanical loads (e.g. by placing objects on top of it or by using it as a step).
- not to make any external or internal modifications to the device.
- to prevent any unintentional power supply switch-on.
- to ensure that installation and maintenance work are carried out by qualified, authorised personnel in possession of the appropriate tools.
- to guarantee a defined or controlled restarting of the process, after a power supply interruption.
- to use the device only if in perfect working order and in compliance with the instructions provided in the operating instructions.
- to observe the general technical rules when installing and using the device.

NOTE

The device may be damaged by the fluid in contact with.

- Systematically check the chemical compatibility of the component materials of the device and the fluids likely to come into contact with it (for example: alcohols, strong or concentrated acids, aldehydes, alkaline compounds, esters, aliphatic compounds, ketones, halogenated aromatics or hydrocarbons, oxidants and chlorinated agents).

NOTE

Elements / Components sensitive to electrostatic discharges

- This device contains electronic components sensitive to electrostatic discharges. They may be damaged if they are touched by an electrostatically charged person or object. In the worst case scenario, these components are instantly destroyed or go out of order as soon as they are activated.
- To minimise or even avoid all damage due to an electrostatic discharge, take all the precautions described in the EN 61340-5-1 and 5-2 norms.
- Also ensure that you do not touch any of the live electrical components.

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4. GENERAL INFORMATION

4.1. Manufacturer's address and international contacts

To contact the manufacturer of the device, use following address:

Bürkert SAS

Rue du Giessen

BP 21

F-67220 TRIEMBACH-AU-VAL

You may also contact your local Bürkert sales office.

The addresses of our international sales offices are available on the internet at: www.burkert.com

4.2. Warranty conditions

The condition governing the legal warranty is the conforming use of the device in observance of the operating conditions specified in this manual.

4.3. Information on the Internet

You can find the operating instructions and technical data sheets regarding the type 8025 or the type 8035 at: www.burkert.com.

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5. DESCRIPTION

5.1. Area of application

The compact version of the flowmeter type 8025 or 8035 is designed to measure the flow rate of a liquid and to totalise the volume of a liquid.

The remote version of the flowmeter type 8025 is a transmitter that must be connected to an 8020 or an 8030 flow sensor with a sinus or a pulse output, only in "Low Power" version.

5.2. General description

The 8025 is a flowmeter available in compact, panel or wall-mounted version. The 8035 is a flowmeter in compact version.

- A compact version of the 8025 is composed of a flow sensor with paddle-wheel and of an electronic module (the electronic is located in a housing with cover, display and 2 cable glands).
- A compact version of the 8035 is composed of a sensor-fitting type S030, with paddle-wheel and of an electronic module (the electronic is located in a housing with cover, display and 2 cable glands).
- A panel version of the 8025 is an electronic module (an electronic located in an open housing with display).
- A wall-mounted version of the 8025 is an electronic module (an electronic integrated in a housing with cover, display and 3 cable glands).

According to the version, the device requires a 12-36 V DC or a 115/230 V AC power supply.

The electrical connection is carried out via a male fixed connector or on the terminal blocks of the electronic board: whether directly, whether via 2 or 3 cable glands.

5.3. Measuring principle

The circulation of fluid within the pipe causes the paddle wheel of the sensor to rotate. The flowmeter detects the rotation of the paddle-wheel and generates a signal which frequency f is proportional to the flow rate Q, using the formula f = KxQ.

f = frequency in Hertz (Hz)

K = K factor of the S020 or S030 fitting used, in pulse/litre

Q = flow rate in litre/second

5.4. Available versions of the 8025 compact flowmeter

All the compact versions of the flowmeter 8025 have:

- a 4-20 mA current output;
- a pulse output ;
- two totalizers.

Supply voltage	Seals	Electrical connection	Relays	Sensor	Order code
12-36 V DC	FKM [1)]	Male fixed connector	-	Hall, short	418762
12-36 V DC	FKM [1)]		-	Hall, long	418763
12-36 V DC	FKM [1)]	Male fixed connector	-	Coil, short	418764
12-36 V DC	FKM [1)]		-	Coil, long	418765
12-36 V DC	FKM [1)]	Terminal strips via 2 cable glands	-	Hall, short	418802
12-36 V DC	FKM [1)]		-	Hall, long	418803
12-36 V DC	FKM [1)]	Terminal strips via 2 cable glands	-	Coil, short	418804
12-36 V DC	FKM [1)]		-	Coil, long	418805
12-36 V DC	FKM [1)]	Terminal strips via 2 cable glands	2	Hall, short	418778
12-36 V DC	FKM [1)]		2	Hall, long	418779
12-36 V DC	FKM [1)]	Terminal strips via 2 cable glands	2	Coil, short	418780
12-36 V DC	FKM [1)]		2	Coil, long	418781
115/230 V AC	FKM [1)]	Terminal strips via 2 cable glands	-	Hall, short	418423
115/230 V AC	FKM [1)]		-	Hall, long	418424

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Supply voltage	Seals	Electrical connection	Relays	Sensor	Order code
115/230 V AC	FKM [1]	Terminal strips via 2 cable glands	-	Coil, short	418425
115/230 V AC	FKM [1]		-	Coil, long	418426
115/230 V AC	FKM [1]	Terminal strips via 2 cable glands	2	Hall, short	418431
115/230 V AC	FKM [1]		2	Hall, long	418432
115/230 V AC	FKM [1]	Terminal strips via 2 cable glands	2	Coil, short	418433
115/230 V AC	FKM [1]		2	Coil, long	418434

[1] Delivered with the device.

5.5. Available versions of the 8025 panel-mounted transmitter

All the panel versions of the 8025 have:
- a 4-20 mA current output;
- a pulse output;
- two totalizers.

Supply voltage	Relays	Electrical connection	UR and CSA recognized	Order code
12-36 V DC	-	Terminal strips	no	418992
12-36 V DC	-	Terminal strips	yes [2]	552725
12-36 V DC	2	Terminal strips	no	418994
12-36 V DC	2	Terminal strips	yes [2]	552726

[2] identified by the logo c UL us located on the name plate of the device.

5.6. Available versions of the 8025 wall-mounted transmitter

All the wall-mounted versions of the 8025 have:
- a 4-20 mA current output;
- a pulse output;
- two totalizers.

Supply voltage	Electrical connection	Relays	Order code
12-36 V DC	Terminal strips via 3 cable glands	-	418397
12-36 V DC		2	418396
115/230 V AC	Terminal strips via 3 cable glands	-	418400
115/230 V AC		2	418399

5.7. Available versions of the SE35 electronic module

All the versions of the SE35 electronic module have:
- a 4-20 mA current output;
- a pulse output;
- two totalizers.

Supply voltage	Electrical connection	Relays	Sensor	UR and CSA recognized	Order code
12-36 V DC	Male fixed connector	-	Hall	no	444005
12-36 V DC	Male fixed connector	-	Coil	no	423915
12-36 V DC	Terminal strips via 2 cable glands	-	Hall	no	444006
				yes [2]	553432

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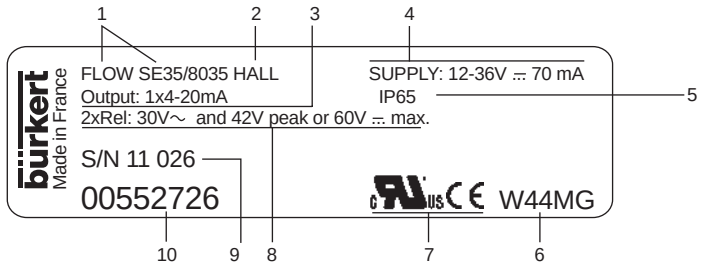
Supply voltage	Electrical connection	Relays	Sensor	UR and CSA recognized	Order code
12-36 V DC	Terminal strips via 2 cable glands	-	Coil	no	423916
12-36 V DC	Terminal strips via 2 cable glands	2	Hall	no	444007
				yes [2]	553433
12-36 V DC	Terminal strips via 2 cable glands	2	Coil	no	423918
115/230 V AC	Terminal strips via 2 cable glands	-	Hall	no	423922
115/230 V AC	Terminal strips via 2 cable glands	2	Hall	no	423924

[2] identified by the logo c UL us located on the name plate of the device.

The ordering codes of the S030 sensor-fitting are listed in the related data sheet: consult the data sheet at: www.burkert.com.

5.8. Description of the name plate



1. Measured quantity and type of the device
2. Type of sensor
3. Characteristics of the current output
4. Power supply and max. of current consumption
5. Protection class of the device
6. Manufacturing code
7. Conformity logo
8. Specification of the relay outputs
9. Serial number
10. Order code

Fig. 1: Name plate of the device

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6. TECHNICAL DATA

The following technical data are relevant for an 8025 compact or an 8035 flowmeter and for the remote 8025 flowmeter connected to a Bürkert flow sensor 8020 / 8030 in a "Low Power" version only.

6.1. Conditions of use

Ambient temperature ▪ 8025 compact, 115/230 V AC, not UR or CSA recognized ▪ 8035 compact, 115/230 V AC, not UR or CSA recognized ▪ Other versions, not UR or CSA recognized ▪ UR and CSA recognized versions	 ▪ -10 to 50 °C ▪ -10 to 50 °C ▪ -10 to 60 °C ▪ -10 to 40 °C
Air humidity	< 80%, non condensated
Protection rating ▪ 8025 compact, and 8035 ▪ 8025 compact and wall-mounted, 8035 ▪ Housing, panel version ▪ non front parts, panel-mounted version	According to EN 60529 ▪ IP65, device wired and cable glands tightened and cover lid screwed tight. ▪ IP65, device wired, cable glands tightened, cover lid screwed tight and entry item nuts of the cable glands tightened at a screwing torque of 1.5 Nm. ▪ IP65, installation completed and closed cabinet ▪ IP20
Degree of pollution (UR and CSA recognized versions)	Degree 2 according to EN 61010 -1
Installation category (UR and CSA recognized versions)	Category I according to UL61010-1
Max. height above sea level	2000 m

6.2. Conformity to standards and directives

The device conforms to the EC directives through the following standards:

- EMC: EN 61000-6-2, EN 61000-6-3, EN 550022
- LVD: EN 61010-1
- Environnemental testing: Vibration: EN 60068-2-6, Shock: EN 60068-2-27.

Pressure: article 3 paragraph 3 of the Pressure Directive 97/23/CE. Acc. to the Pressure Directive 97/23/CE: the device can only be used in the following cases (depending on the max. pressure, the DN of the pipe and the fluid):

Type of fluid	Conditions	
	8025	8035 [1)]
Fluid group 1, paragraph 1.3.a	DN25 only	DN ≤ 25 only
Fluid group 2 paragraph 1.3.a	DN ≤ 32 or DN > 32 and PNxDN ≤ 1000	DN ≤ 32 or DN > 32 and PNxDN ≤ 1000
Fluid group 1 paragraph 1.3.b	DN ≤ 25 or DN > 25 and PNxDN ≤ 2000	PNxDN ≤ 2000
Fluid group 2 paragraph 1.3.b	DN ≤ 400	DN ≤ 200

[1)] For the type 8035: S030 sensor-fitting, DN6 to DN65, in PP, PVC, PVDF, brass or stainless steel.

The UL recognized devices with variable key PU01 comply with the following standards:

- UL 61010-1
- CAN/CSA-C22.2 n° 61010-1

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6.3. General data

Pipe diameter	
▪ 8025 flowmeter	▪ DN20 (except for the DN specified p.22) to DN400
▪ 8025 transmitter (remote versions)	▪ DN06 to DN400
▪ 8035 flowmeter	▪ DN06 to DN65
Type of fitting	▪ S020, for a compact 8025 ▪ S030, for a 8035
Type of fluid	▪ liquid ▪ viscosity: max. 300 cSt ▪ rate of solid particles: max. 1%
Fluid temperature (compact versions)	The fluid temperature may be restricted by the fluid pressure, the material the flow sensor is made of and the material the S020 or S030 fitting used is made of. See "Fig. 2" and "Fig. 3".
▪ with fitting in PVC	▪ 0 to +50 °C
▪ with fitting in PP	▪ 0 to +80 °C
▪ with fitting in PVDF, stainless steel or brass	▪ -15 to +80 °C
Fluid pressure (compact versions)	The fluid pressure may be restricted by the fluid temperature, the material the flow sensor is made of (only for the compact 8025) and the material the fitting used is made of. See "Fig. 2" and "Fig. 3".
▪ 8025 compact	▪ PN10
▪ 8035 with S030 fitting in plastic	▪ PN10
▪ 8035 with S030 fitting in metal	▪ PN16 (PN40 on request)
Flow rate measurement	
▪ Measurement range	
- Sensor with pulse output (Hall)	- 0.3 m/s to 10 m/s
- Sensor with sinus output (coil)	- 0.5 m/s to 10 m/s
▪ Accuracy	
- with a teach-in procedure	- 1 % of the measured value (at the value of the teach-in flow rate)
- with the K factor of the fitting used	- 2,5 % of the measured value
▪ Linearity [1)]	▪ ±0.5 % of the full scale
▪ Repeatability [1)]	▪ ±0,4 % of the measured value

[1)] Determined in the following reference conditions: medium = water, water and ambient temperatures 20 °C, min. upstream and downstream distances respected, appropriate pipe dimensions

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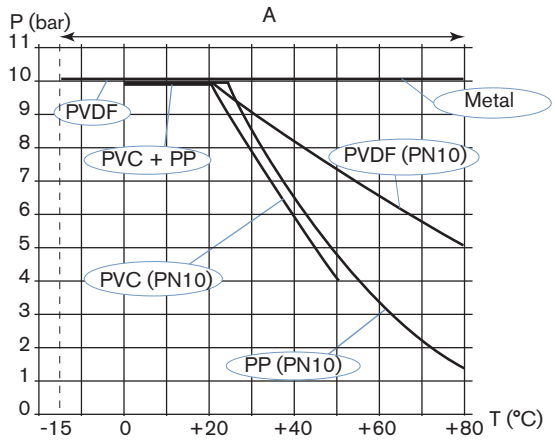
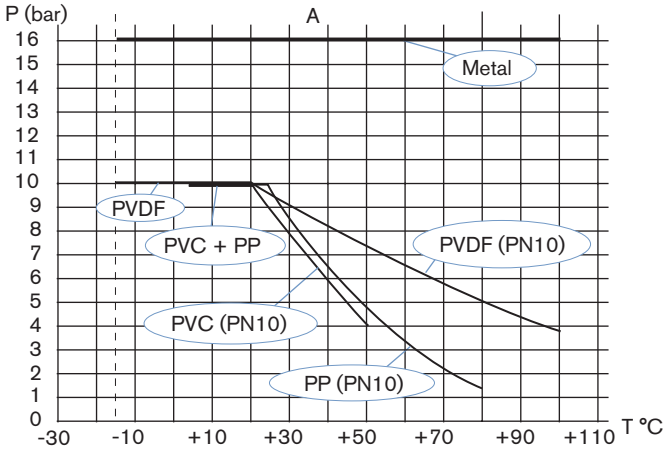


A: range of use

Fig. 2: Fluid temperature /pressure dependency curves for the 8025 compact version, depending on the material the S020 fitting is made of



A: range of use

Fig. 3: Fluid temperature /pressure dependency curves for the 8035 compact version, depending on the material the S030 sensor-fitting is made of

6.4. Mechanical data

Part	Material
Sensor holder - Paddle-wheel	
▪ 8025, compact versions	▪ PVDF
▪ 8025, remote versions	▪ Refer to the operating instructions of the remote sensor
▪ 8035	▪ Refer to the operating instructions of the S030 sensor-fitting
Axis and bearings of the paddle-wheel	
▪ 8025, compact versions	▪ Ceramics
▪ 8025, remote versions	▪ Refer to the operating instructions of the remote sensor
▪ 8035	▪ Refer to the operating instructions of the S030 sensor-fitting
Seals	
▪ 8025, compact versions	▪ FKM (EPDM delivered with the device)
▪ 8025, remote versions	▪ Refer to the operating instructions of the remote sensor
Nut	
▪ 8025, compact versions	▪ PC

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Part	Material
Housing ▪ 8025, compact or panel versions ▪ 8025, wall-mounted versions ▪ 8035	 ▪ PC ▪ ABS ▪ PC
Cover ▪ 8025 compact versions or 8035 ▪ 8025 panel versions ▪ 8025, wall-mounted versions	 ▪ PC (Cover with lid) ▪ PC ▪ ABS
Front foil	Polyester
Screws (4)	Stainless steel
Male fixed connector and female connector (type 2508)	PA
Cable glands	PA

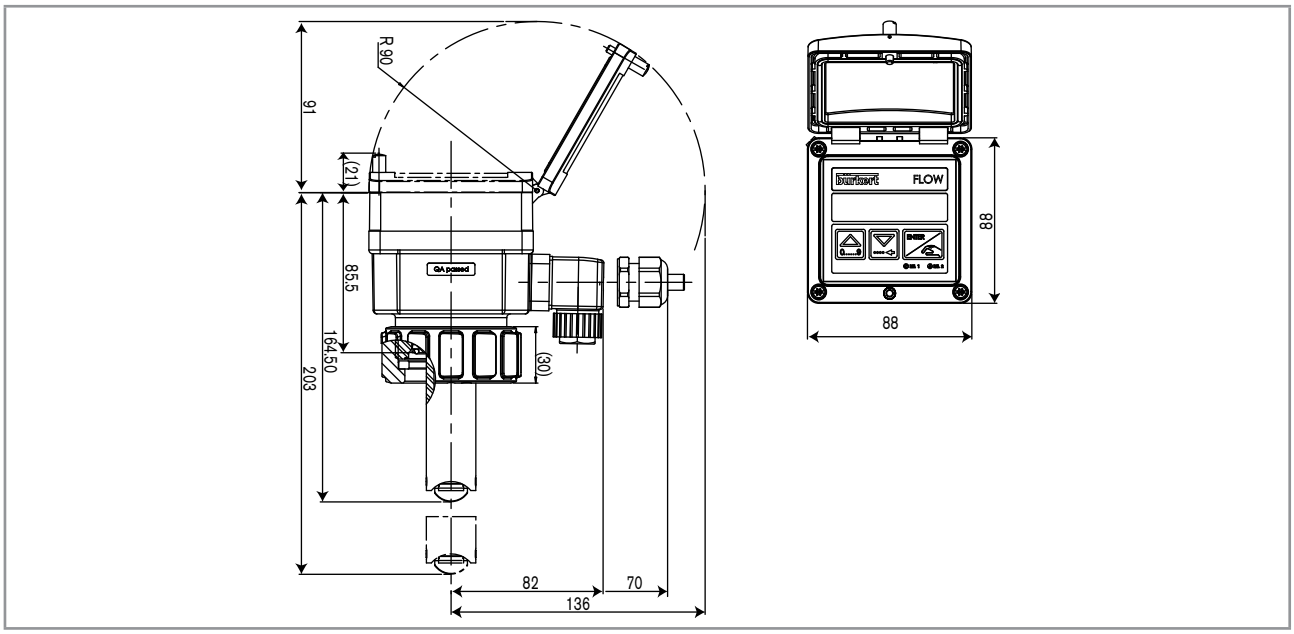

Fig. 4: Dimensions of 8025 compact flowmeter [mm]

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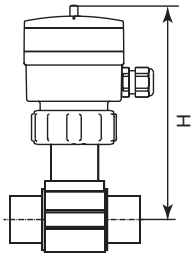
Tab. 1: Dimensions of 8025 compact flowmeter associated to an S020 fitting [height H in mm]

	Tee fitting	Saddle	Spigot, in plastic	Welding tab with radius, in stainless steel
DN20	185			
DN25	185			
DN32	188			
DN40	192			188
DN50	198	223		193
DN65	198	221	206	199
DN80		226	212	204
DN100		231	219	214
DN110		227		
DN125		234	254	225
DN150		244	261	236
DN180		268		
DN200		280	282	257
DN250			300	317
DN300			312	336
DN350			325	348
DN400			340	

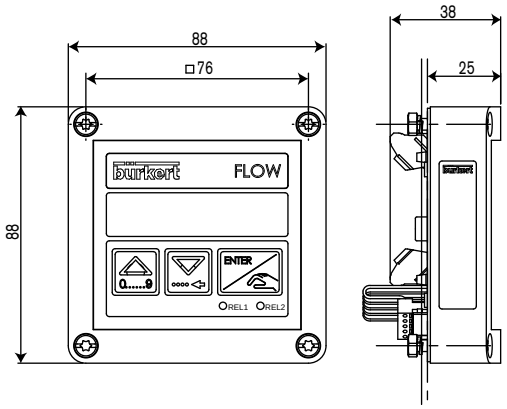


Fig. 5: Dimensions [mm] of the electronic module of the 8025 flowmeter a in panel version

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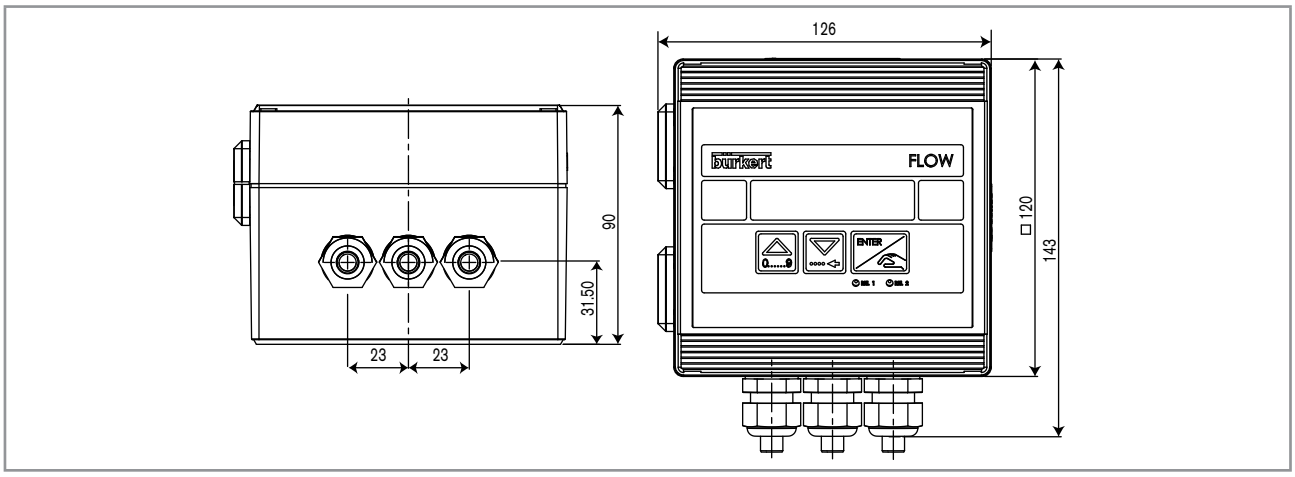
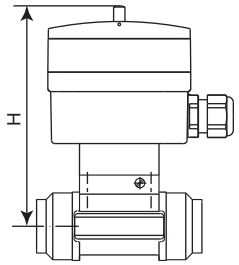


Fig. 6: Dimensions [mm] of the electronic module of the 8025 flowmeter in a wall-mounted version

Tab. 2: Dimension H [mm] of the 8035 depending on the DN of the S030 sensor-fitting

DN	H with S030 sensor-fitting
06	134
08	134
15	139
20	137
25	137
32	140
40	144
50	151
65	151



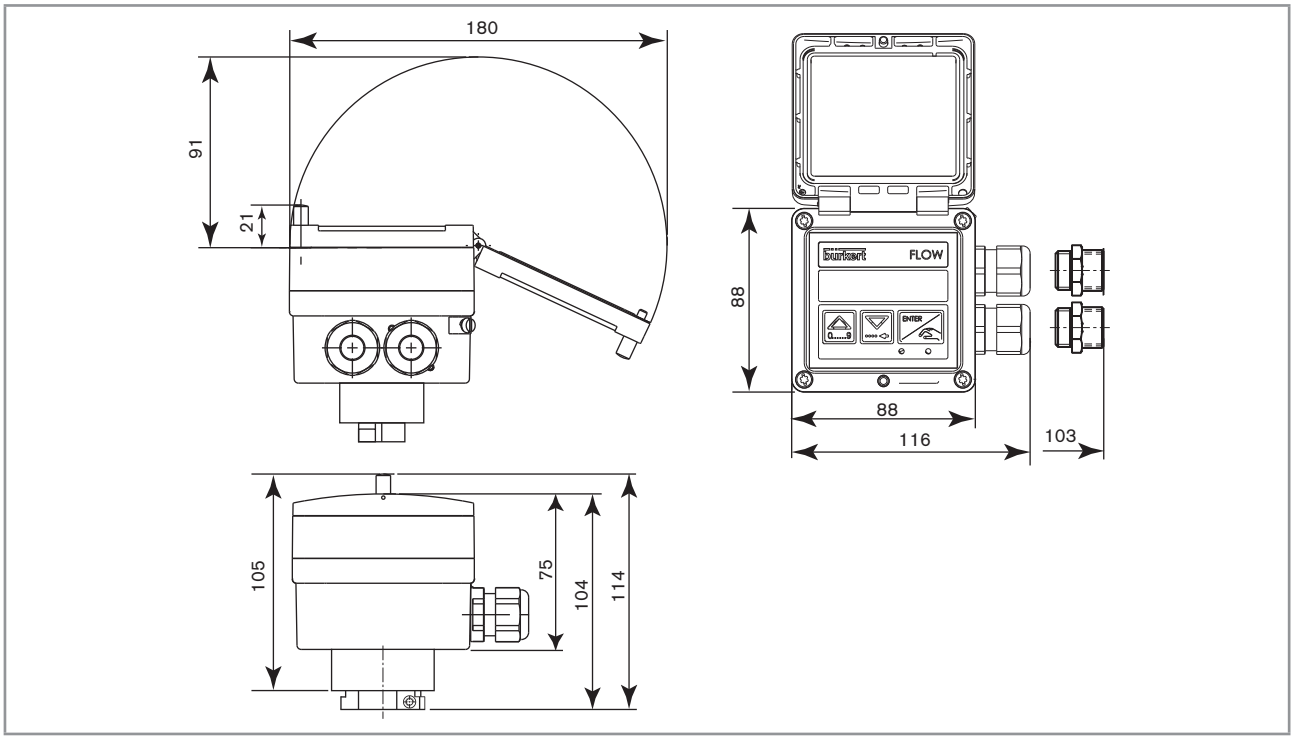


Fig. 7: Dimensions [mm] of the SE35 electronic module of the 8035 flowmeter

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6.5. Electrical data

12-36 V DC power supply	▪ filtered and regulated ▪ SELV circuit (safety extra low voltage), with a safe energy level ▪ oscillation rate: ±10 %
Power source (not supplied)	▪ limited power source according to paragraph 9.3 of EN 61010-1 standard ▪ or class 2 source according to UL 1310/1585 and EN 60950-1 standards
115/230 V AC power supply ▪ frequency ▪ supplied voltage ▪ current ▪ integrated protection ▪ power	 ▪ 50/60 Hz ▪ 27 V DC, regulated ▪ max. 250 mA ▪ 250 mA time-delay fuse ▪ Compact version: 6 VA ▪ Wall-mounted version 3 VA
Current consumption (without the consumption of the 4-20 mA output) ▪ 12-36 V DC version with relays ▪ 12-36 V DC version without relays ▪ 115/230 V AC compact version ▪ 115/230 V AC wall-mounted version	 ▪ 70 mA max. (at 12 V DC) ▪ 25 mA max. (at 12 V DC) ▪ 125 mA max. (at 27 V DC) ▪ 250 mA max. (at 27 V DC)
Pulse output ▪ type ▪ function ▪ frequency (f) ▪ electrical data ▪ duty cycle ▪ protection	polarized, potential-free ▪ NPN/PNP (wiring dependant) ▪ pulse output, adjustable pulse value ▪ 2,5-400 Hz ▪ 5-36 V DC, 100 mA max., voltage drop 2,5 V DC at 100 mA ▪ 0,5 ▪ galvanically insulated, and protected against overvoltages, polarity reversals and short-circuits
Relay outputs ▪ operating ▪ electrical data of the load (non UL recognized devices) ▪ electrical data of the load (UL recognized devices)	 ▪ hysteresis, adjustable thresholds, normally open ▪ 230 V AC / 3 A ▪ 30 V AC max. and 42 V peak or 60 V DC max.
Current output ▪ response time (10% to 90%) ▪ max. loop impedance, 12-36 V DC version ▪ max. loop impedance, 115/230 V AC version ▪ wiring, version without relays ▪ wiring, version with relays	4-20 mA, sinking or sourcing mode (wiring dependant) ▪ 5,75 s (default) ▪ 900 Ω at 30 V DC, 600 Ω at 24 V DC, 50 Ω at 12 V DC ▪ 800 Ω ▪ 2-wire ▪ 3-wire
Protection against polarity reversals	yes

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6.6. Specifications of the connected flow sensor

Sensor input	
▪ signal frequency	▪ 2,5 to 400 Hz
▪ pulse signal (Hall)	▪ NPN, open collector
▪ sinus signal (coil)	▪ typical sensitivity of 35 mV peak-peak, at 252 Hz
Sensor output	
▪ power supply	▪ 10-34 V DC (V+ minus 2 V DC), 1 mA max.

6.7. Electrical connection

Version	Connection features
With male fixed connector	Female connector (type 2508 supplied) For the female connector type 2508 with order code 438811 and the female connector type 2509 (not supplied) with order code 162673, use a shielded cable. ▪ external diameter of the cable: 5 to 8 mm ▪ cross section of the wires: 0.2 to 1.5 mm^2 ▪ max. length of the power supply, current output and pulse output connection cables: 50 m
With terminal strip, with or without cable glands	Shielded cable (not supplied): ▪ external diameter of the cable: 6 to 12 mm (4 to 6 mm when using a multiway seal) ▪ cross section of the wires: 0.2 to 1.5 mm^2
All	Cross section of the local earthing wire: 0.75 mm^2

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7. INSTALLATION

7.1. Safety instructions

DANGER

Risk of injury due to electrical voltage.

- Shut down the electrical power source of all the conductors and isolate it before carrying out work on the system.
- Observe all applicable accident protection and safety regulations for electrical equipment.

WARNING

Risk of injury due to nonconforming installation.

- The electrical and fluid installation can only be carried out by qualified and skilled staff with the appropriate tools.
- Install appropriate safety devices (correctly rated fuse and/or circuit-breaker); for the versions with 115/230 V AC power supply, insert a protection device between phase and neutral.
- Respect standard NF C 15-100 / IEC 60364.
- Observe mounting instructions of the fitting.

Risk of injury due to unintentional switch on of power supply or uncontrolled restarting of the installation.

- Take appropriate measures to avoid unintentional activation of the installation.
- Guarantee a set or controlled restarting of the process subsequent to any intervention on the device.

WARNING

Risk of injury if the fluid pressure/temperature dependency is not respected.

- Take account of fluid temperature-pressure dependency according to the nature of the materials the fitting is made of (see the technical data and the operating instructions of the fitting used).
- Comply with the Pressure Directive 97/23/CE.

Protect this device against electromagnetic interference, ultraviolet rays and, when installed outdoors, the effects of the climatic conditions.

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7.2. Installation of a compact version

7.2.1. Instructions for installing a compact version onto the pipe

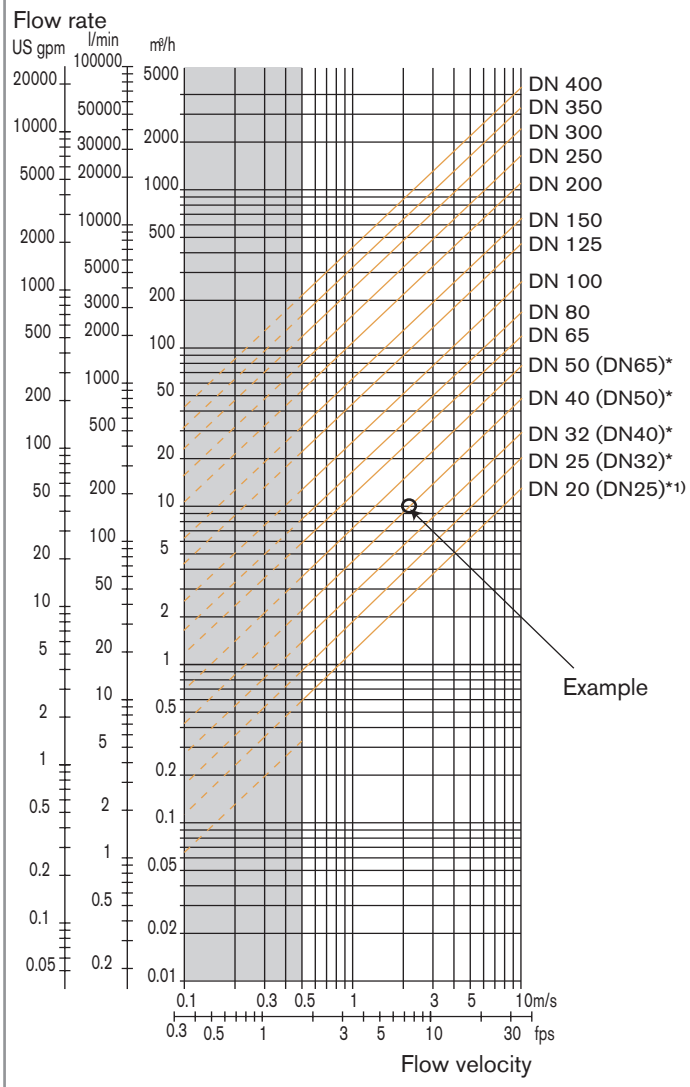
The 8025 flowmeter has to be inserted into an S020 fitting mounted on a pipe.

The 8035 flowmeter has to be installed on the pipe using the S030 sensor-fitting.

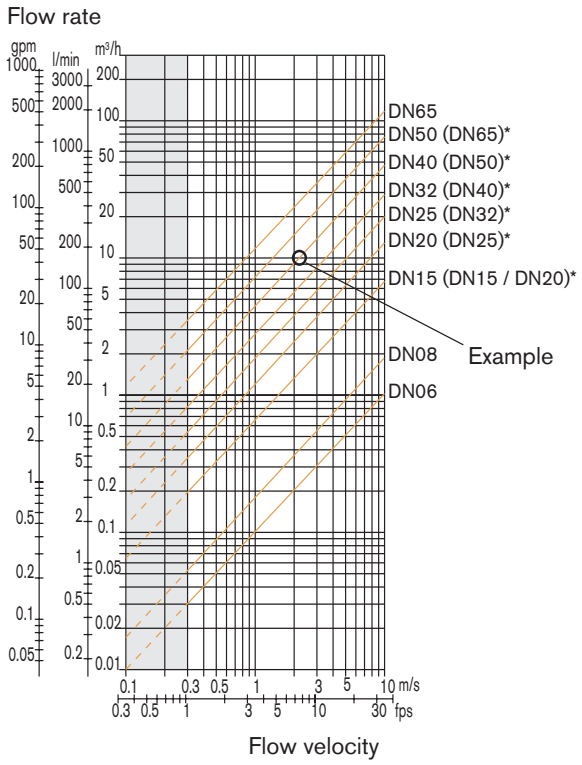
→ Choose an S020 or S030 fitting appropriate to the velocity of the fluid inside the pipe: refer to the graphs below:

Tab. 3: Flow rate/ fluid velocity/ DN of S020 fitting and of S030 sensor-fitting diagram

S020 fitting



S030 sensor-fitting



Example:

- Specification: if the nominal flow rate is 10 m³/h, the ideal flow velocity is between 2 and 3 m/s.
- Solution: intersection between flow rate and flow velocity in the graph gives the appropriate pipe diameter, DN40 (or DN50 for the asterisked fittings).

1) The device cannot be installed onto the following DN20 fittings:

* For the fittings:

- with external threads acc. to SMS 1145.
- with weld ends acc. to SMS 3008, BS 4825 / ASME BPE or DIN 11850 Rg2.
- Clamp acc. to SMS 3017 / ISO 2852, BS 4825 / ASME BPE or DIN 32676.

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→ Install the device on the pipe in such a way that the upstream and downstream distances are respected according to the design of the pipes, refer to standard EN ISO 5167-1 and "Fig. 8".

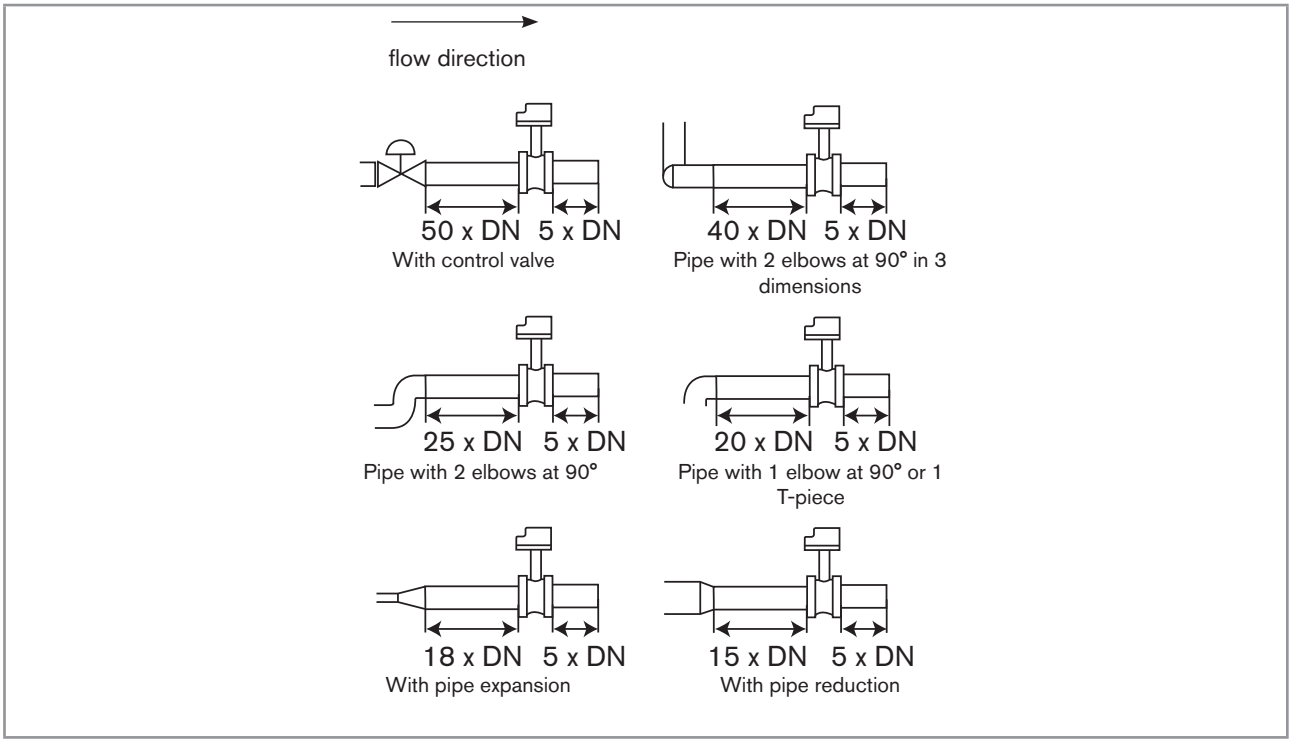

Fig. 8: Upstream and downstream distances depending on the design of the pipes

→ Ensure that the pipe is always filled in the section around the device (see "Fig. 9").

→ When mounting vertically ensure that the flow direction is in an upward direction (see "Fig. 9").

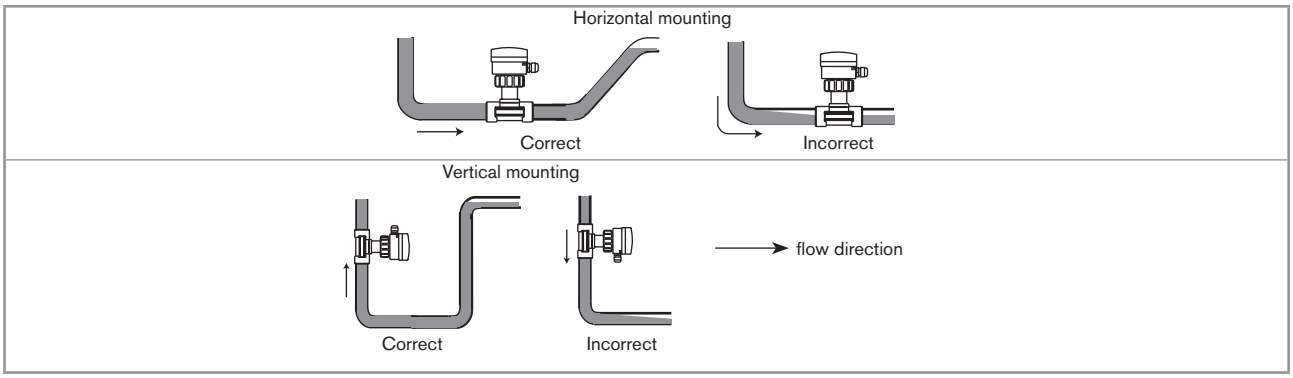

Fig. 9: Filling of the pipe

→ Prevent the formation of air bubbles in the pipe in the section around the device (see "Fig. 10").

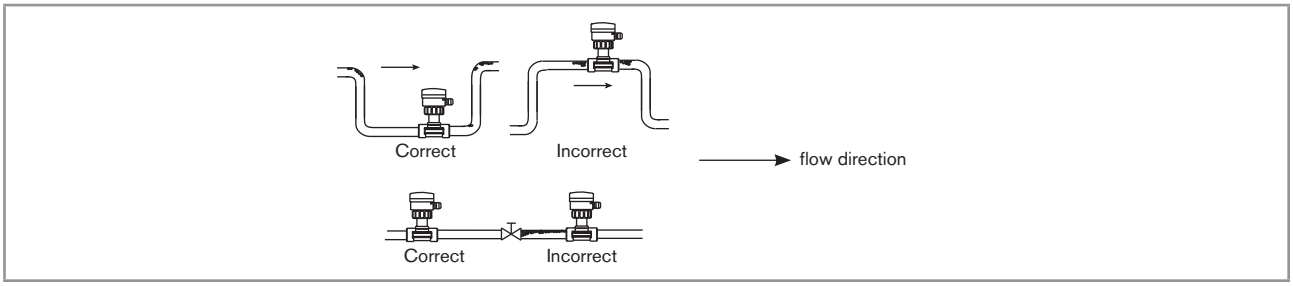

Fig. 10: Air bubbles within the pipe

→ If necessary, use a flow conditioner to improve measurement accuracy.

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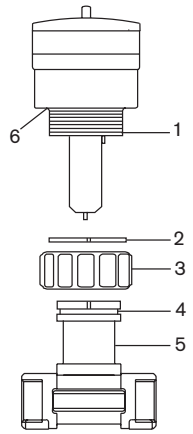
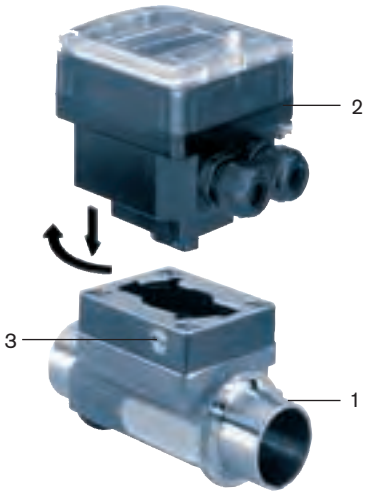
7.2.2. Installation of the 8025 on the S020 fitting



→ Install the S020 fitting onto the pipe obeying the instructions in chap. “7.2.1”.
→ Check that there is a seal on the fitting and that it is not damaged. Replace the seal if necessary.
→ Insert the nut 3 on the fitting 5.
→ Insert the snap ring 2 into the groove 4.
→ Check that the seal 6 is correctly inserted on the flow sensor.
→ Insert the device 1 into the fitting.
If the mounting is correctly done the device cannot be turned around anymore.
→ Hand lock the assembly with nut 3.

Fig. 11: Installation of the 8025 on the S020 fitting

7.2.3. Installation of the SE35 electronic module onto the S030 sensor-fitting



→ Respect the installation instructions contained in the operating instructions of the fitting used.
→ Insert the electronic module 2 into the S030 sensor-fitting.
→ Fix with a 30° rotation.
→ Tighten the side screw 3 to lock the electronic module to the sensor-fitting.

Fig. 12: Installation of the SE35 onto the S030 sensor-fitting

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7.3. Installation of a panel version of the 8025 flowmeter

Install the panel version of the device in a cabinet with a protection class at least IP54 to ensure a degree of pollution 2 inside the cabinet.

→ To cut the opening in the cabinet door, use the supplied cutting plan of the frontage of the electrical cabinet, respecting the dimensions indicated in "Fig. 13".

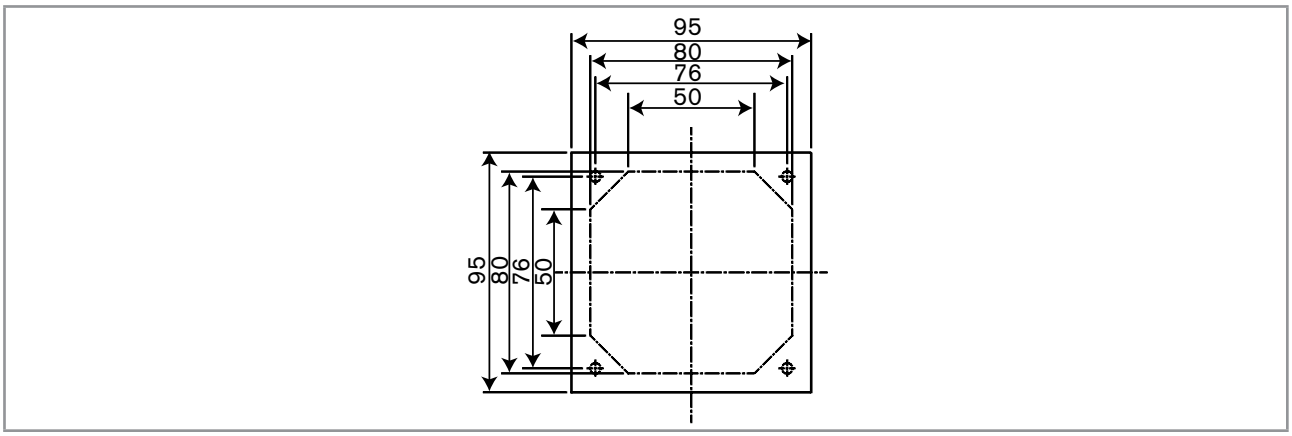

Fig. 13: Dimensions [mm] of the electrical cabinet frontage cutting plan

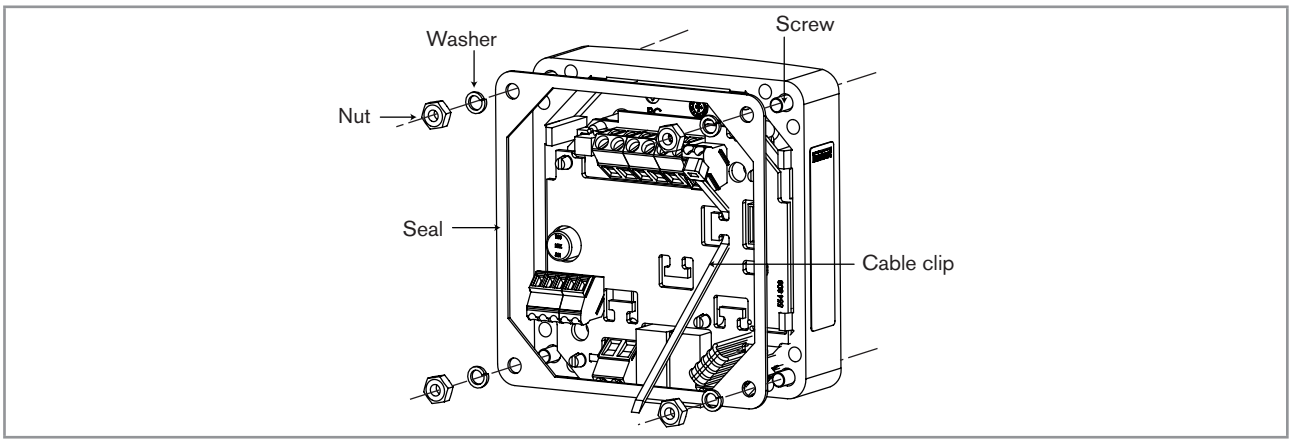

Fig. 14: Installation of a 8025, panel version

→ Insert the 4 screws in the housing (from the front). If the cabinet door is too thick use the 4 supplied M4*25 screws.

→ Insert the seal on the external threads of the 4 screws (rear of the housing).

→ Put the assembly on the cutout, electronics turned to the inside of the cabinet.

→ Put the 4 washers on the 4 screws.

→ Put a nut on each of the 4 screws and tighten the nuts to secure the device to the cabinet.

→ Wire according to the instructions in chapter "8".

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7.4. Installation of a wall-mounted version of the 8025 transmitter

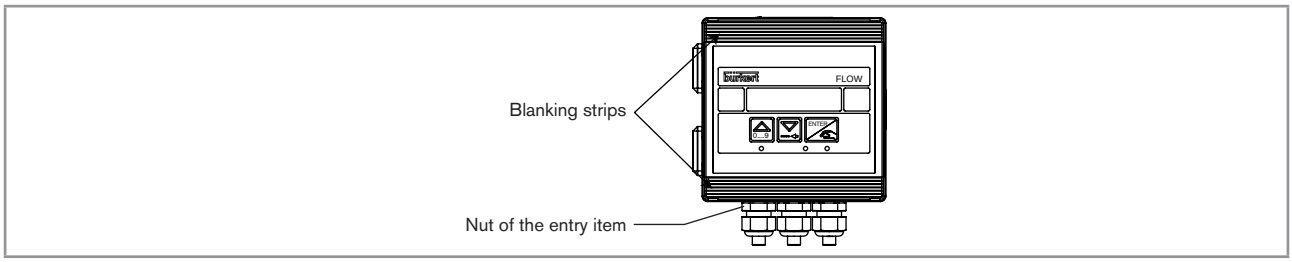
NOTE

Risk of material damage if the cable glands are not tightly screwed on the housing

- Before installing the wall-mounted housing on its support, tighten the nuts of the entry item of the cables glands at a torque of 1.5 Nm.

The flow transmitter in a wall-mounted version has 4 holes in the bottom of the housing.

→ Remove the blanking strips covering the screws.



→ Loosen the 4 screws and open the cover to get access to the holes [1].

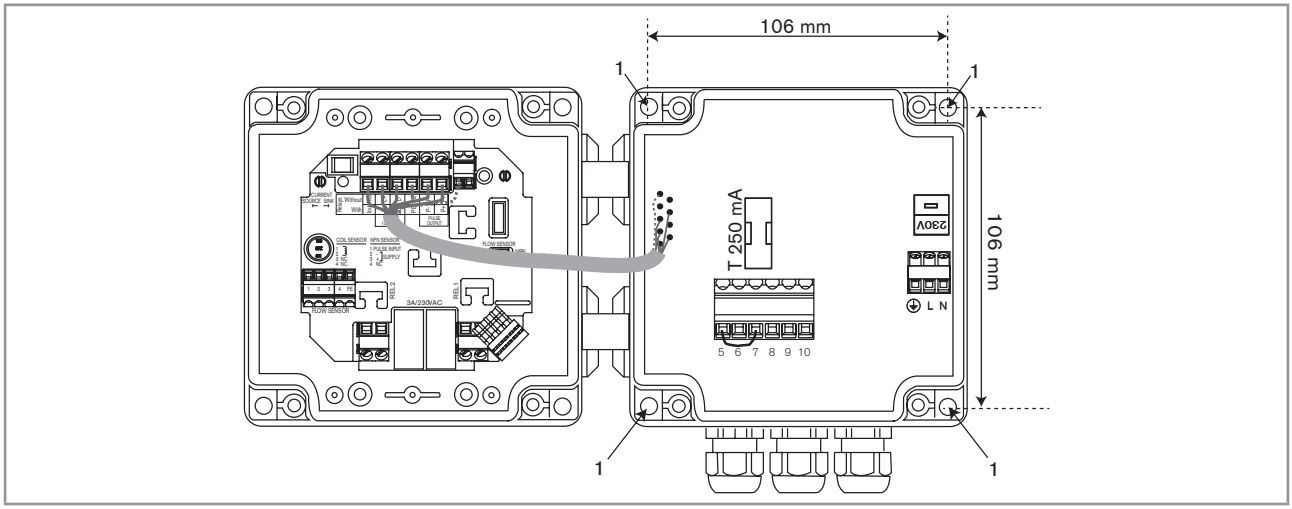


Fig. 15: Installation of a wall-mounted version

→ Secure the housing to the support respecting the dimensions indicated in "Fig. 15".

→ Wire acc. to the instructions in chap. "8".

→ Close the housing and tighten the 4 screws of the cover.

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8. WIRING

DANGER

Risk of injury due to electrical voltage.

- Shut down the electrical power source of all the conductors and isolate it before carrying out work on the system.
- Observe all applicable accident protection and safety regulations for electrical equipment.

Insert the supplied stopper gaskets into the unused cable glands of a wall-mounted or a compact version to ensure the tightness of the device.

Only move the selectors when the power supply is off.

- Use a filtered and regulated 12-36 V DC power supply. The circuit has to be safety extra low voltage (SELV), with a safe energy level.
- Make sure the installation is equipotential. See chap. "8.1".
- Use shielded cables with an operating temperature limit of 80 °C minimum.
- Do not install the cables near high voltage or high frequency cables; if a combined installation cannot be avoided, a minimum space of 30 cm should be respected.
- Protect the power supply by means of a 300 mA fuse and a switch.
- Protect the relays by means of a max. 3 A fuse and a circuit breaker (depending on the process).
- Do not apply both a dangerous voltage and a safety extra-low voltage to the relays.

8.1. Making the installation equipotential

To ensure the equipotentiality of the installation (power supply - device - fluid):

→ Connect together the various earth spots in the installation to eliminate the potential differences that may occur between different earthes.

→ Observe faultless earthing of the shield of the power supply cable, at both ends.

→ Connect the negative power supply terminal to the earth to suppress the effects of common mode currents. If this connection cannot be made directly, a 100 nF/50 V capacitor can be fitted between the negative power supply terminal and the earth.

→ Special attention has to be paid if the device is installed on plastic pipes because there is no direct earthing possible. Proper earthing is performed by earthing together the metallic instruments such as pumps or valves, that are as close as possible to the device. If no such instrument is near the device, insert metallic earth rings inside the plastic pipes upstream and downstream the device and connect these parts to the same earth. The earth rings must be in contact with the fluid.

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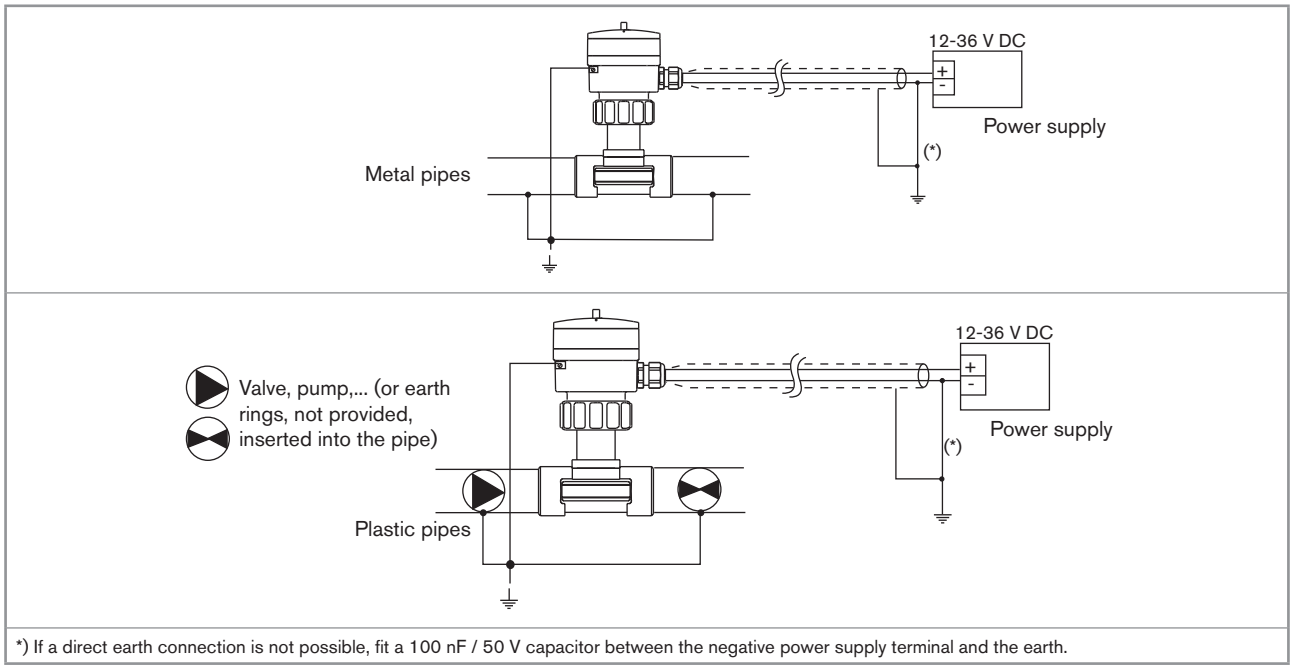
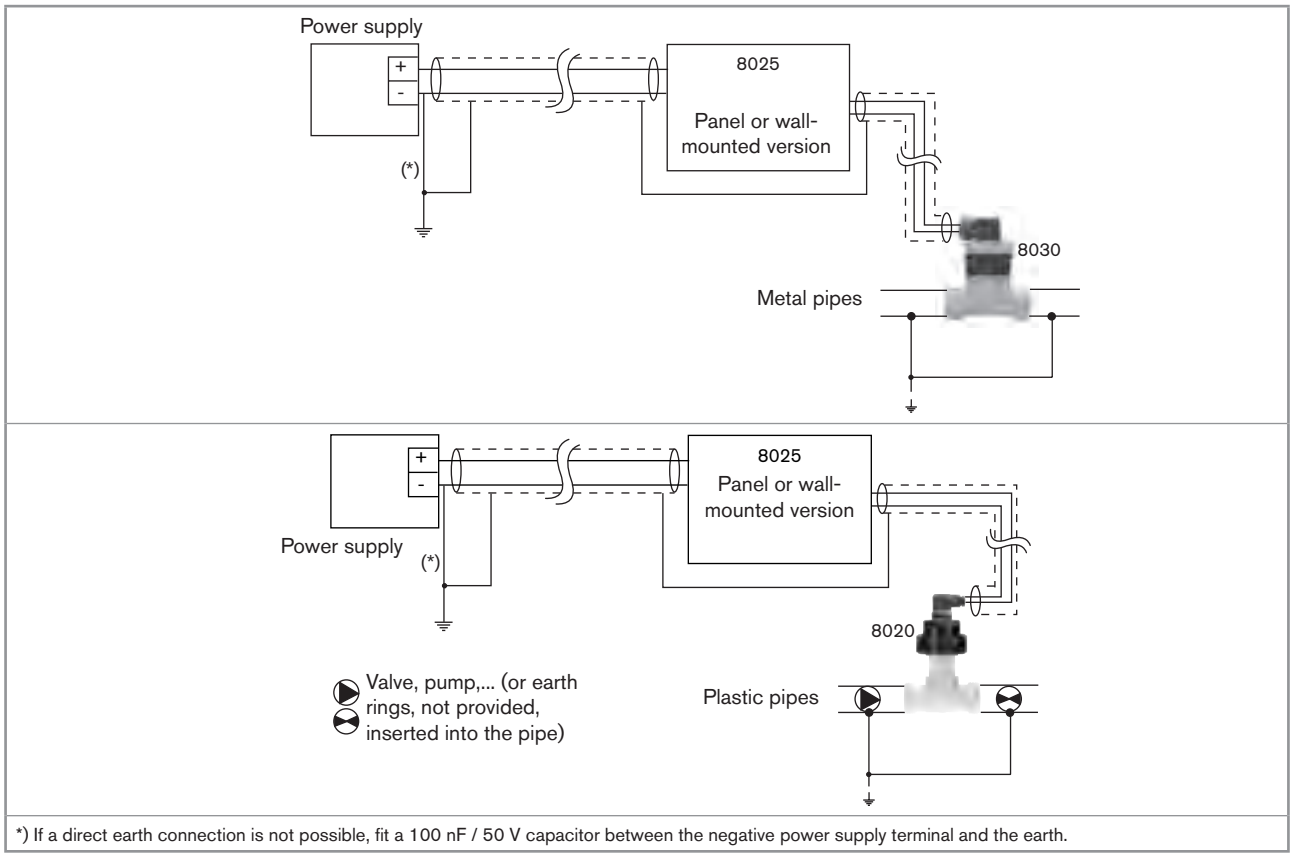


*) If a direct earth connection is not possible, fit a 100 nF / 50 V capacitor between the negative power supply terminal and the earth.

Fig. 16: 8025 in a compact version and 8035, equipotentiality skeleton diagram with metal or plastic pipes



*) If a direct earth connection is not possible, fit a 100 nF / 50 V capacitor between the negative power supply terminal and the earth.

Fig. 17: 8025 in a remote version and equipotentiality skeleton diagram with metal or plastic pipes

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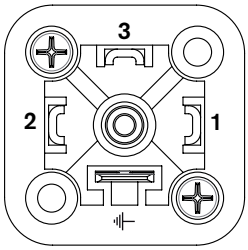
8.2. Wiring the 8025 compact version and the 8035 with a 4 pin male fixed connector



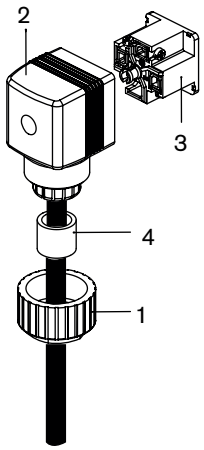
1: V+ (12-36 V DC)

2: Positive pulse output

3: L- (0 V DC)

⏚: Negative pulse output

Fig. 18: Pin assignment of the 4 pin male fixed connector



→ Unscrew the nut **1** of the cable gland.

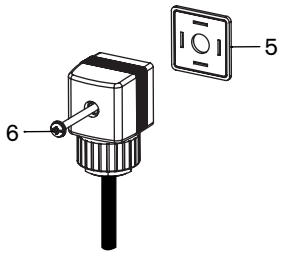
→ Remove the terminal block **3** from the housing **2**.

→ Insert the cable through the nut 1 then through the gasket **4**, through the cable gland and finally through the housing **2**.

→ Connect the wires on terminal block **3.** See "Fig. 18", "Fig. 20" and "Fig. 21".

→ Position the terminal block **3** in steps of 90° then put it back into the housing **2**, pulling gently on the cable so that the wires do not clutter the housing.

→ Tighten the nut **1** on the cable gland.

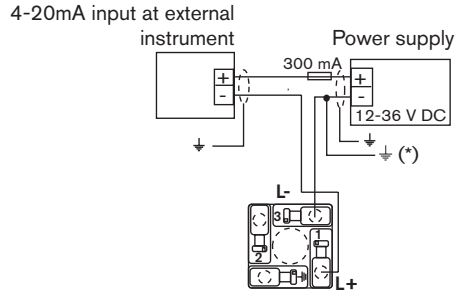


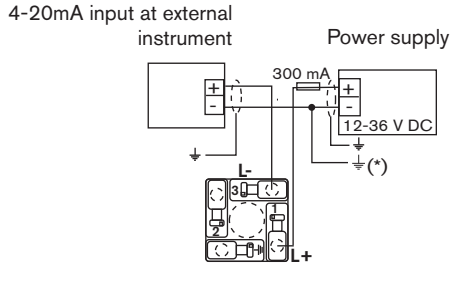
→ Place the seal **5** between the connector and the fixed connector on the device and then plug the 2508 connector into the fixed connector.

→ Insert and then tighten the screw **6** to ensure tightness and correct electrical contact.

Fig. 19: Assembling the female connector type 2508 (supplied)

→ Wire the electrical supply and the current output using one of the wiring plans of "Fig. 20".





(*) If direct earthing is not possible, insert a 100 nF / 50 V condensator between the negative terminal of the voltage supply and the earth.

Fig. 20: Possible wiring of the current output of a compact version with male fixed connector

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→ Wire the transistor output using one of the wiring plans of "Fig. 21".

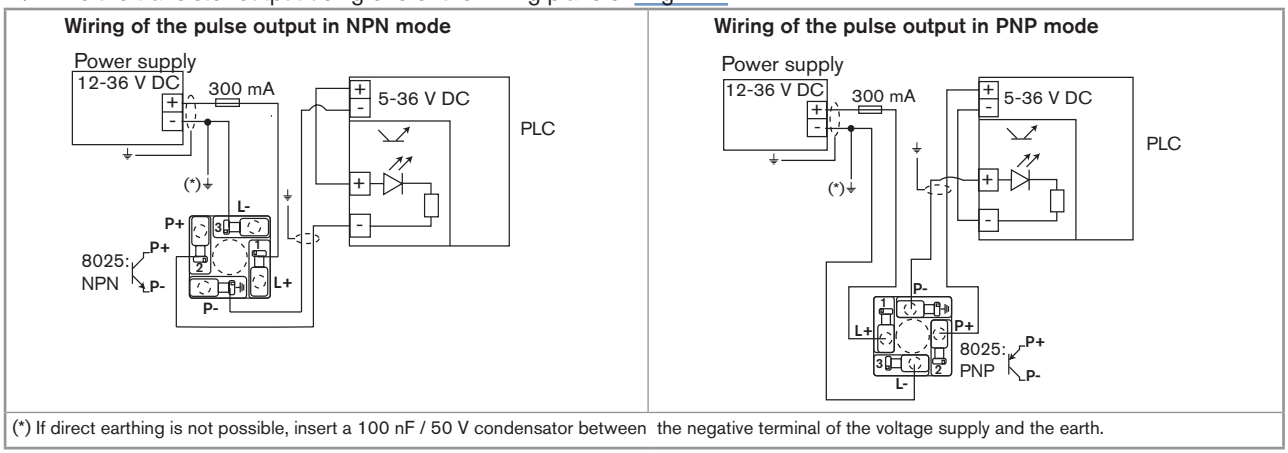


Fig. 21: Wiring of the pulse output in NPN or PNP mode, of a compact version with male fixed connector

8.3. Configuring the selectors

Only move the selectors when the power supply is off.

→ Before wiring the device, configure the selectors on the electronic board: see chap. "8.3.1" to "8.3.3".

8.3.1. FLOW SENSOR selector

The FLOW SENSOR selector makes it possible to configure the type of flow sensor: coil or Hall.

For the version with male fixed connector, the selector is factory-set depending on the output signal of the flow sensor mounted on the device.

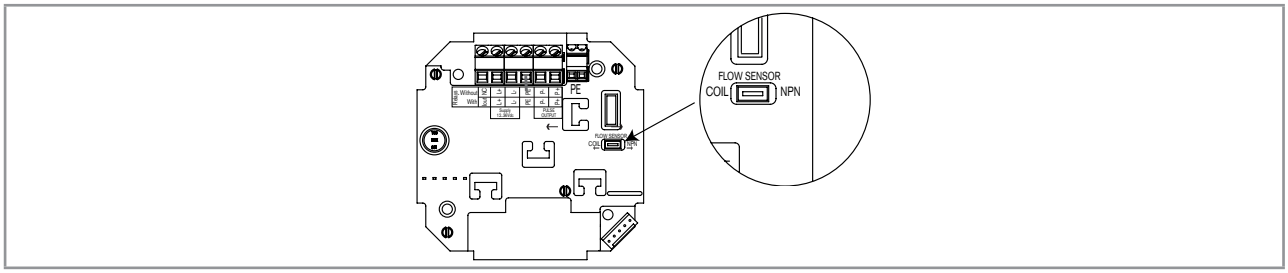


Fig. 22: Position of the FLOW SENSOR connector on the electronic board

Tab. 4: Positioning of the FLOW SENSOR selector depending on the output signal of the flow sensor

Version of the flowmeter	Output signal of the remote sensor	Position of the FLOW SENSOR selector
All	Pulse, NPN (hall)	NPN
All	Sinus (coil)	COIL

8.3.2. SOURCE/SINK selector

The Source/Sink selector makes it possible to set the 4-20 mA current output of the versions with relays, in sourcing or in sinking mode. Set the selector depending on the type of wiring.

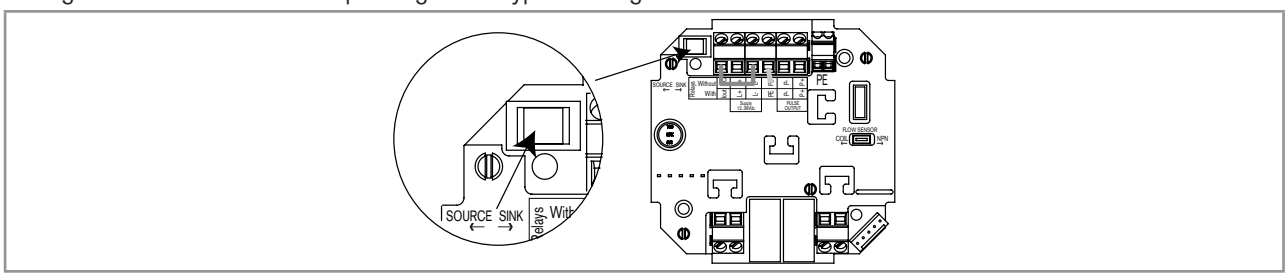


Fig. 23: Position of the Source / Sink selector

Tab. 5: Positioning of the Source / Sink selector depending on the wiring of the current output of a version with relays

Wiring the 4-20 mA output	Position of the Source/Sink selector on a version with relays
Not wired (jumper wire in place)	SOURCE
Sourcing mode	SOURCE
Sinking mode	SINK

8.3.3. 115/230 V AC selector

The 115/230 V AC selector makes it possible to configure the supply voltage of the device in a 115/230 V AC version.

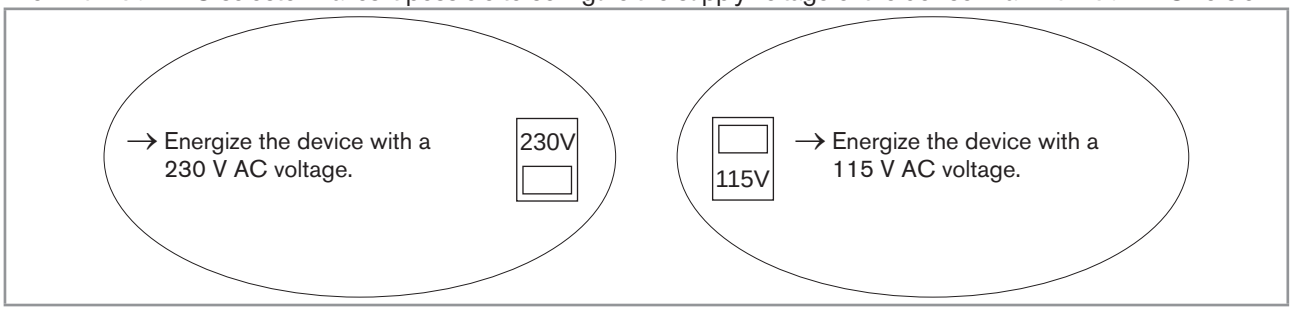


Fig. 24: Supply voltage selector on a 115/230 V AC version

8.4. Wiring the 8025 in a compact version and the 8035, with or without relays, with cable glands

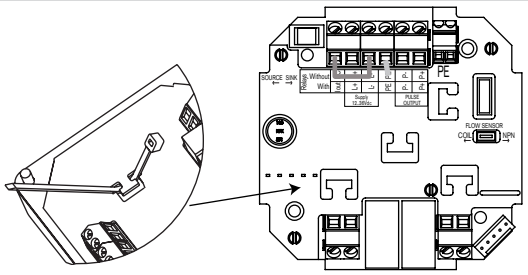
8.4.1. Wiring instructions

Seal the unused cable gland using the stopper gasket supplied to make sure the device is tight.
→ Unscrew the nut of the cable gland.
→ Remove the transparent disc inside the cable gland.
→ Insert the stopper gasket.
→ Screw the nut back.

→ Lift the transparent lid after having unfastened the screw.

→ Untighten the 4 screws then remove the cover from the device.

→ For the versions with relays, insert the cable clip.



→ Before wiring the device insert the supplied cable clips into the slots of the electronic board and of the 115/230 V AC power supply board if the device has such a board.

Fig. 25: Inserting the cable clips

→ Pass the cables through the cable glands.

→ Set the selectors according to chap. "8.3".

→ Connect the terminal block according to the indications of chap. "8.4.2" to "8.4.6".

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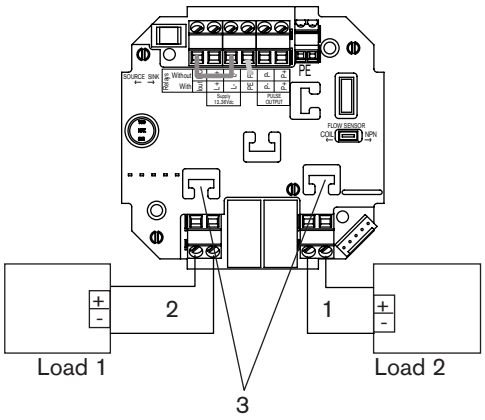
8.4.2. Wiring of the relays (versions with relay output)



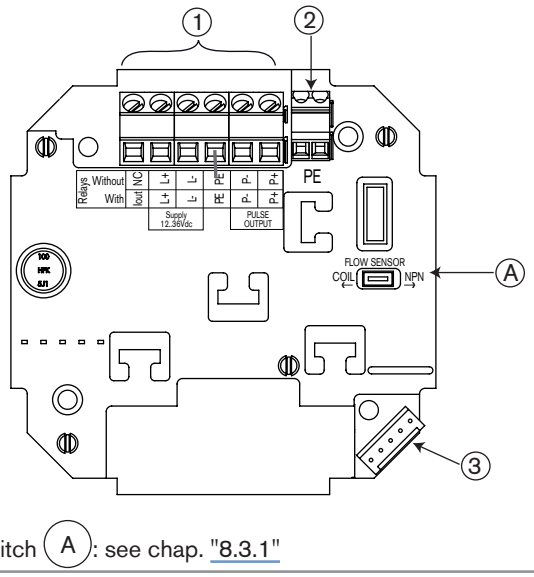
- 1: relay 1 connection
- 2: relay 2 connection
- 3: fixation slots

→ Always secure the relays connection cables in the slots marked 3 (see "Fig. 25").

Fig. 26: Wiring of the relays

8.4.3. Wiring the 8025 compact version and the 8035, 12-36 V DC, without relays, with cable glands

→ Before wiring the device, configure the selectors on the electronic board (see chap. "8.3").



Switch (A): see chap. "8.3.1"

Terminal block 1

NC: not connected

L+: positive power supply

L-: negative power supply

PE: wiring of the PE between the main board and the protection board

P-: negative pulse output

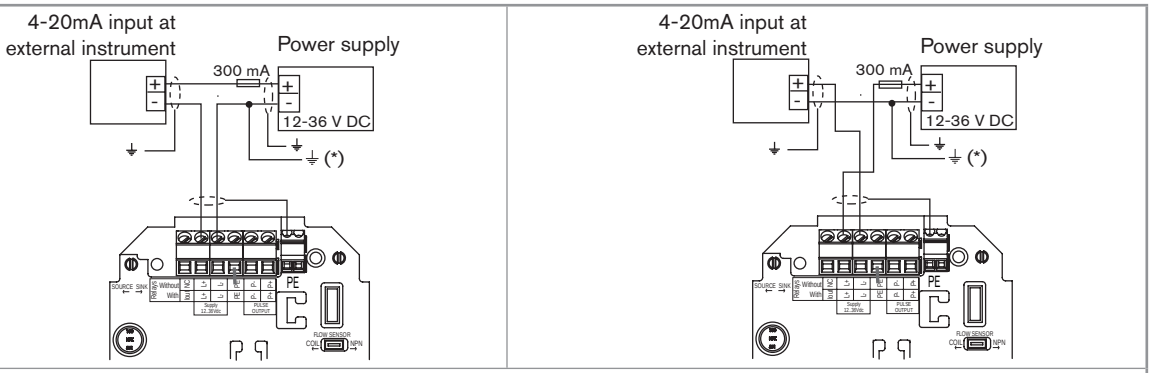
P+: positive pulse output

Terminal block 2 PE

Wiring of the cable shields

Connector 3: connection of the flow sensor

Fig. 27: Terminal assignment of a 12-36 V DC compact version without relays, with cable glands



(*) If direct earthing is not possible, insert a 100 nF / 50 V condensator between the negative terminal of the voltage supply and the earth.

Fig. 28: Possible wiring of the current output of a compact version, 12-36 V DC, without relays, with cable glands

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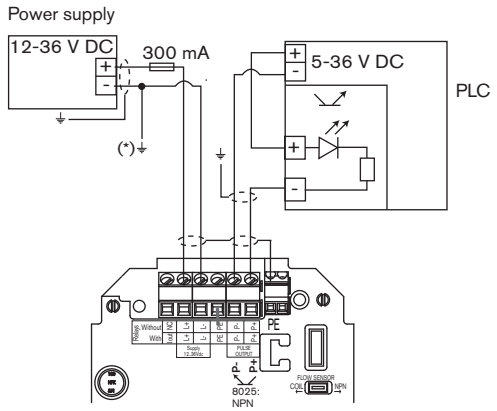
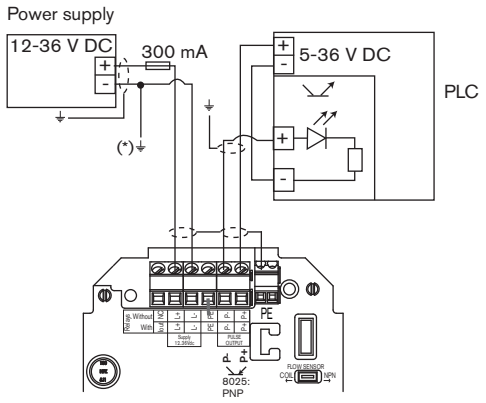
Wiring of the pulse output in NPN mode



Wiring of the pulse output in PNP mode

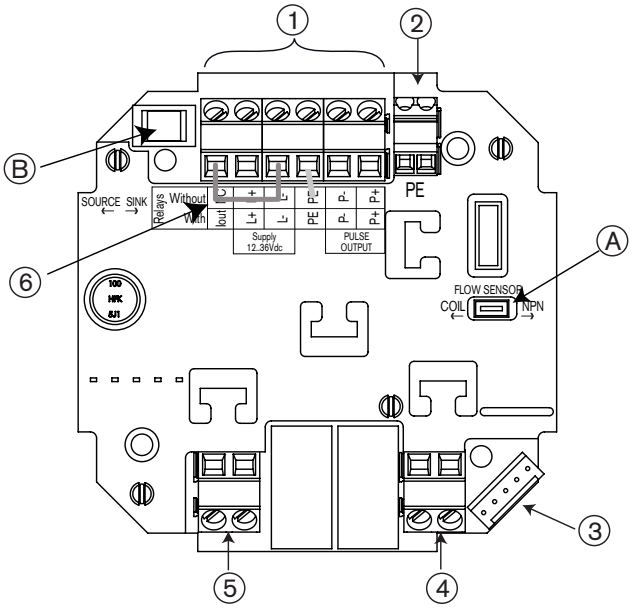


(*) If direct earthing is not possible, insert a 100 nF / 50 V condensator between the negative terminal of the voltage supply and the earth.

Fig. 29: Wiring, in NPN or PNP mode, of the pulse output of a compact version, 12-36 V DC, without relays, with cable glands

8.4.4. Wiring the 8025 compact version and the 8035, 12-36 V DC, with relays, with cable glands

→ Before wiring the device, configure the selectors on the electronic board (see chap. "8.3").



Switch (A): see chap. "8.3.1"

Switch (B): see chap. "8.3.2"

Terminal block 1

Iout: 4-20 mA output

L+: positive power supply

L-: negative power supply

PE: wiring of the PE between the main board and the protection board

P-: negative pulse output

P+: positive pulse output

Terminal block 2 PE

Wiring of the cable shields

Connector 3: connection of the flow sensor

Terminal block 4: wiring of relay 1, see chap. "8.4.2"

Terminal block 5: wiring of relay 2:, see chap. "8.4.2"

Jumper wire 6: jumper wire to be removed if the 4-20 mA output is connected

Fig. 30: Terminal assignment of a 12-36 V DC compact version with relays, with cable glands

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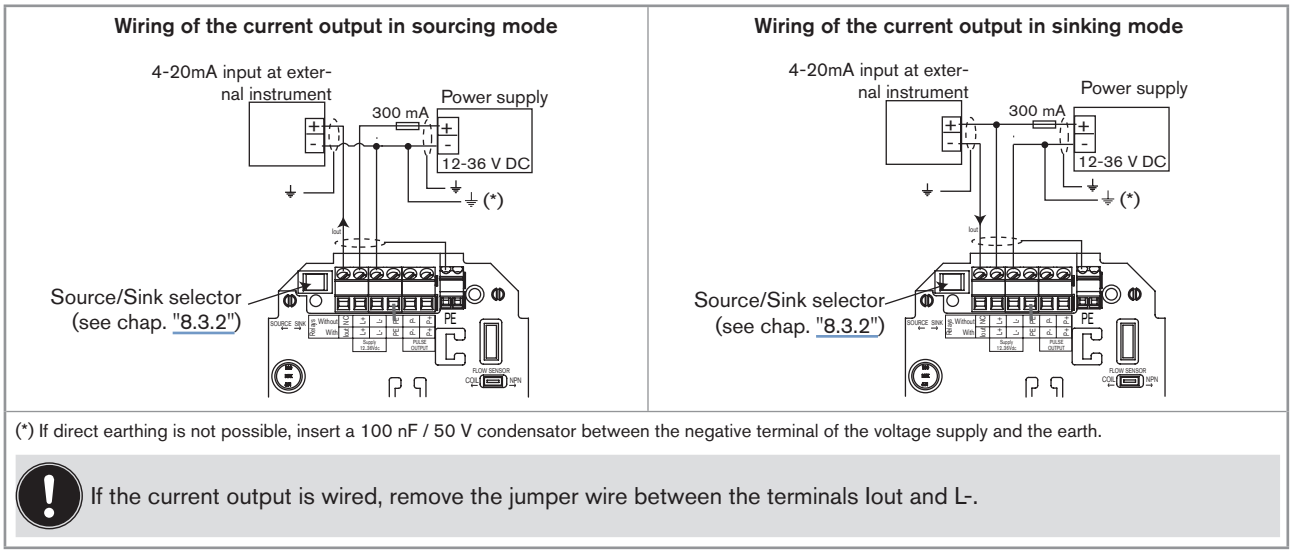
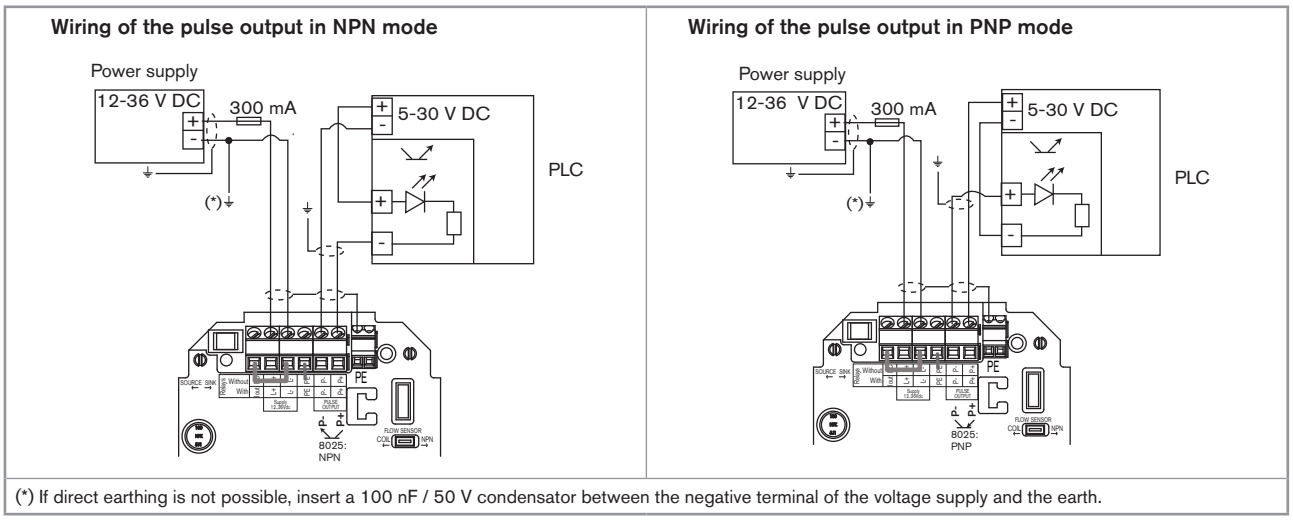


(*) If direct earthing is not possible, insert a 100 nF / 50 V condensator between the negative terminal of the voltage supply and the earth.

If the current output is wired, remove the jumper wire between the terminals Iout and L-.

Fig. 31: Wiring, in sourcing or sinking mode, of the current output of a compact version, 12-36 V DC, with relays, with cable glands



(*) If direct earthing is not possible, insert a 100 nF / 50 V condensator between the negative terminal of the voltage supply and the earth.

Fig. 32: Wiring in NPN or PNP mode, of the pulse output of a compact version, 12-36 V DC, with relays, with cable glands,

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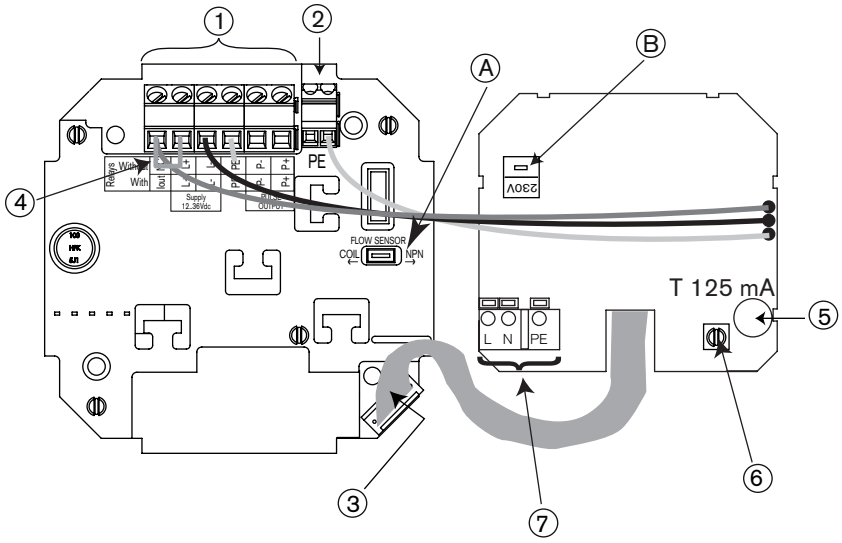
8.4.5. Wiring the 8025 compact version and the 8035, 115/230 V AC, without relays, with cable glands

→ Before wiring the device, configure the selector on the electronic board (see chap. "8.3").

The red wire is wired on the NC terminal to make the wiring of the 4-20 mA output easier (see "Fig. 34"). The jumper wire 4 between L+ and NC energizes the NC terminal.



Switch (A): see chap. "8.3.1"

Switch (B): see chap. "8.3.3"

Terminal block 1

NC: not connected (terminal for the wiring of the 4-20 mA output)

L+ (red wire, factory wired)

PE: wiring of the PE between the main board and the protection board

L- (black wire, factory wired)

P-: negative pulse output

P+: positive pulse output

Terminal block 2 PE

Shield wiring (green/yellow wire, factory wired)

Connector 3: connection of the flow sensor

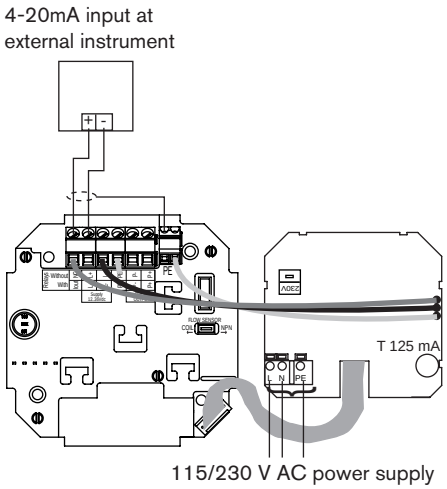
Jumper wire 4: jumper wire to be removed if the 4-20 mA output is connected

Time-delay fuse 5: fuse to protect the 115 V AC or 230 V AC power supply

Earth terminal 6 of the housing: internally connected to the earth plug

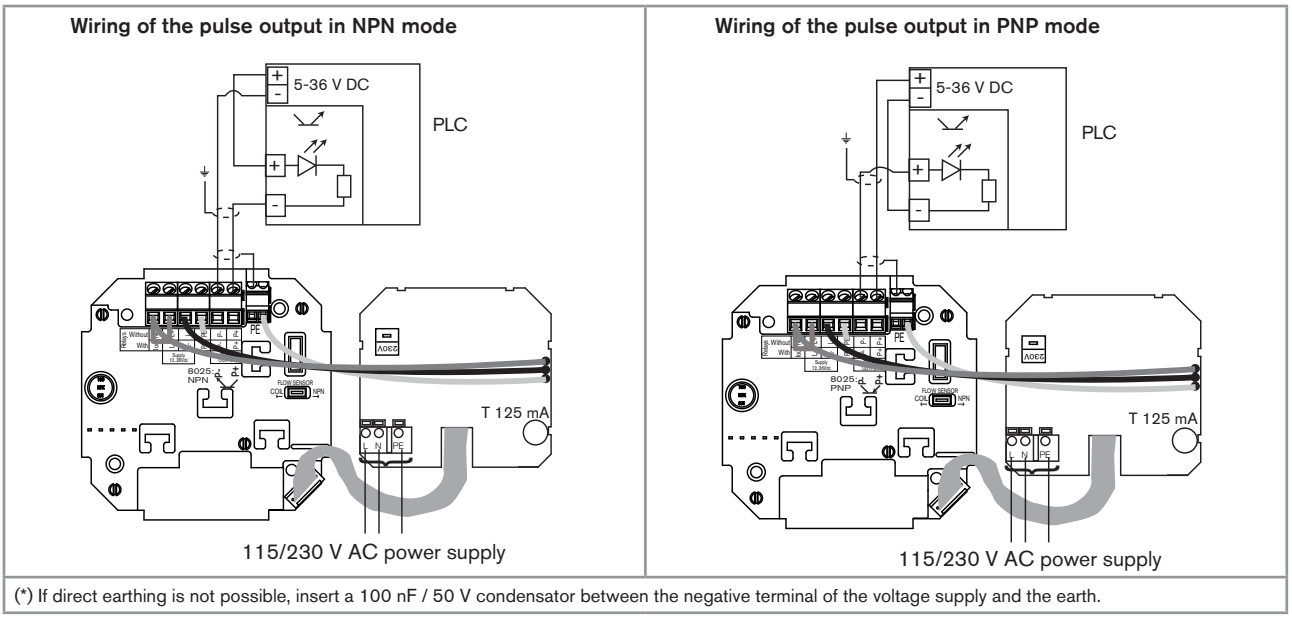
Terminal block 7: wiring of the 115/230 V AC power supply

Fig. 33: Terminal assignment of a 115/230V AC compact version without relays, with cable glands



If the current output is wired, remove the jumper wire between the terminals Iout and L+.

Fig. 34: Wiring of the current output of a compact version, 115/230 V AC, without relays, with cable glands

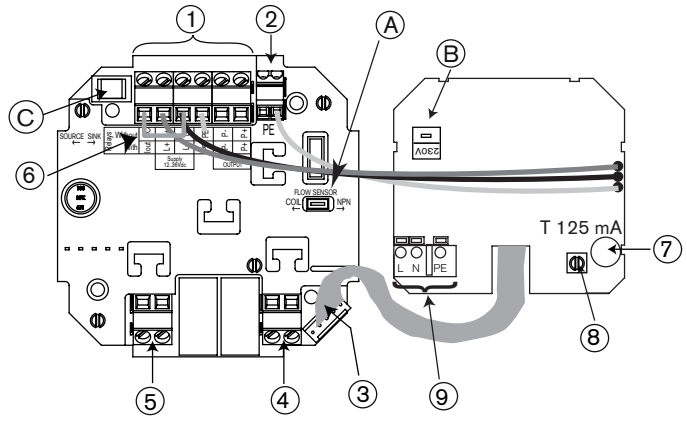


(*) If direct earthing is not possible, insert a 100 nF / 50 V condensator between the negative terminal of the voltage supply and the earth.

Fig. 35: Wiring, in NPN or PNP mode, of the pulse output of a 115/230 V AC compact version, without relays, with cable glands

8.4.6. Wiring the 8025 compact version and the 8035, 115/230 V AC, with relays, with cable glands

→ Before wiring the device, configure the selectors on the electronic board (see chap. "8.3").



Switch (A): see chap. "8.3.1"

Switch (B): see chap. "8.3.3"

Switch (C): see chap. "8.3.2"

Terminal block 1

Iout: 4-20 mA output

L+ (red wire, factory wired)

L- (black wire, factory wired)

PE: wiring of the PE between the main board and the protection board

P-: negative pulse output

P+: positive pulse output

Terminal block 2 PE

Shield wiring (green/yellow wire, factory wired)

Connector 3: connection of the flow sensor

Terminal block 4: wiring of relay 1: see chap. "8.4.2"

Terminal block 5: wiring of relay 2: see chap. "8.4.2".

Jumper wire 6: jumper wire to be removed if the 4-20 mA output is connected

Time-delay fuse 7: fuse to protect the 115 V AC or 230 V AC power supply

Terminal 8: earth terminal, internally connected to the earth plug

Terminal block 9: wiring of the 115/230 V AC power supply

Fig. 36: Terminal assignment of a 115/230 V AC compact version with relays, with cable glands

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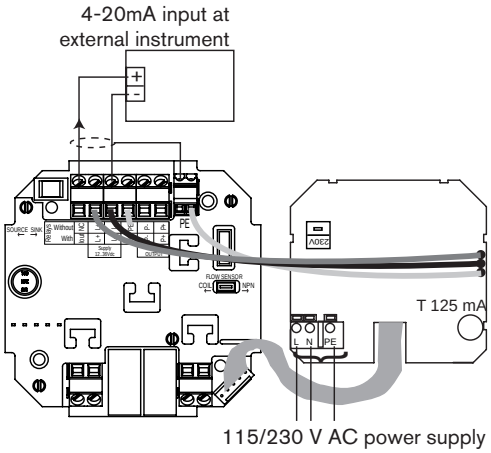
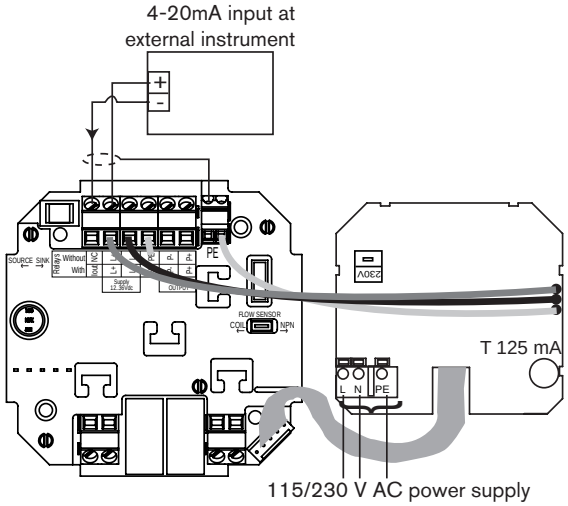


If the current output is wired, remove the jumper wire between the terminals Iout and L+.

Fig. 37: Wiring in sourcing mode of the current output of a compact version, 115/230 V AC, with relays, with cable glands



If the current output is wired, remove the jumper wire between the terminals Iout and L+.

Fig. 38: Wiring in sinking mode of the current output of a compact version, 115/230 V AC, with relays, with cable glands

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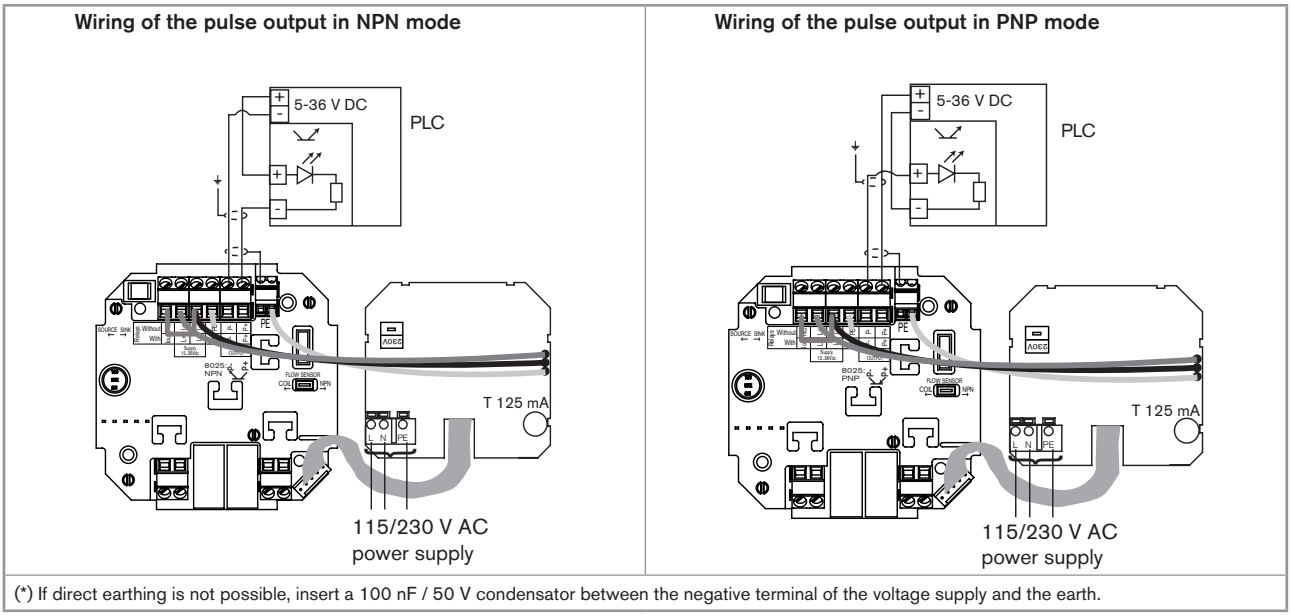


(*) If direct earthing is not possible, insert a 100 nF / 50 V condensator between the negative terminal of the voltage supply and the earth.

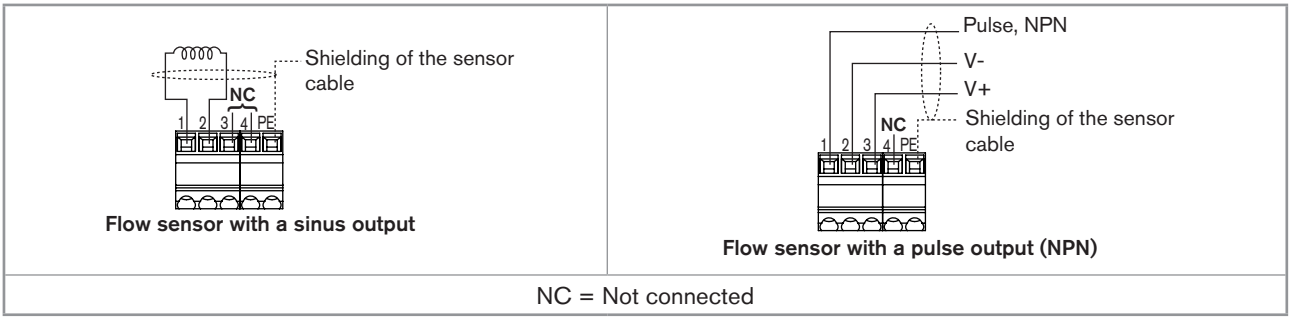
Fig. 39: Wiring, in NPN or PNP mode, of the pulse output of a 115/230 V AC compact version, with relays, with cable glands

→ Connect the relays according to chap. "8.4.2".

8.5. Connecting the flow sensor to the 8025 transmitter, panel-mounted version or wall-mounted version

→ Configure the FLOW SENSOR selector on the electronic board (see chap. "8.3").

→ Connect the remote flow sensor to the FLOW SENSOR terminal block of the electronic board by respecting the pin assignment depending on the output type of the remote sensor, either sinus (COIL) or pulse output (NPN).



NC = Not connected

Fig. 40: Wiring of the remote flow sensor to the 8025 transmitter

8.6. Wiring the 8025 remote (wall-mounted or panel), 12-36 V DC, with or without relays

8.6.1. Wiring the 8025, remote version, 12-36 V DC, without relays

→ For a wall-mounted version, obey the wiring instructions of chap. "8.7.1".

→ Configure the FLOW SENSOR selector on the electronic board (see chap. "8.3").

→ Connect the flow sensor to the transmitter according to chap. "8.5".

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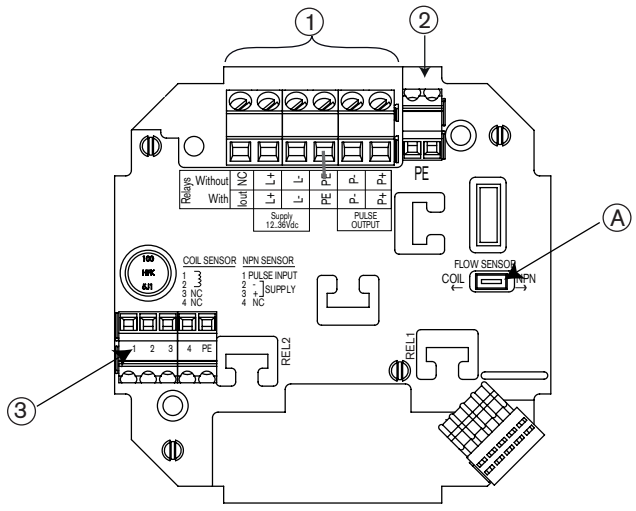


Switch (A): see chap. "8.3.1"

Terminal block 1

NC: not connected

L+: positive power supply

L-: negative power supply

PE: wiring of the PE between the main board and the protection board

P-: negative pulse output

P+: positive pulse output

Terminal block 2 PE

Wiring of the cable shields

Connector 3: connection of the flow sensor see chap. "8.5"

Fig. 41: Terminal assignment of a panel-mounted or wall-mounted version, 12-36 V DC, without relays

The wiring of the current output and the wiring of the pulse output of the panel or wall-mounted transmitter, 12-36 V DC, without relays, are the same as for a compact flowmeter, 12-36 V DC, without relays, with cable glands.

→ Wire the current output according to "Fig. 28" of chap. "8.4.3".

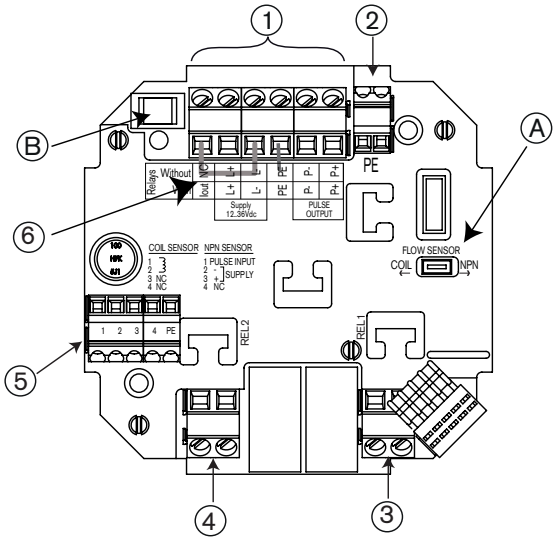
→ Wire the pulse output according to "Fig. 29" of chap. "8.4.3".

8.6.2. Wiring the 8025, remote version, 12-36 V DC, with relays

→ For a wall-mounted version, obey the wiring instructions of chap. "8.7.1".

→ Before wiring the device, configure the selectors on the electronic board (see chap. "8.3").

→ Connect the flow sensor to the transmitter according to chap. "8.5".



Switch (A): see chap. "8.3.1"

Switch (B): see chap. "8.3.2"

Terminal block 1

Iout: 4-20 mA output

L+: positive power supply

L-: negative power supply

PE: wiring of the PE between the main board and the protection board

P-: negative pulse output

P+: positive pulse output

Terminal block 2 PE

Wiring of the cable shields

Terminal block 3: wiring of relay 1, see chap. "8.4.2"

Terminal block 4: wiring of relay 2, see chap. "8.4.2"

Connector 5: connection of the flow sensor: see chap. "8.5"

Jumper wire 6: jumper wire to be removed if the 4-20 mA output is connected

Fig. 42: Terminal assignment of a panel-mounted or wall-mounted version, 12-36 V DC, with relays

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→ Insert the cable clips: see "Fig. 25".

The wiring of the current output and the pulse output of the panel or wall-mounted transmitter, 12-36 V DC, without relays, are the same as for a compact flowmeter, 12-36 V DC, with relays, with cable glands.

→ Wire the current output according to "Fig. 31" of chap. "8.4.4".

→ Wire the pulse output according to "Fig. 32" of chap. "8.4.4".

8.7. Wiring the 8025, wall-mounted version, 115/230 V AC, with or without relays

8.7.1. Wiring instructions for a wall-mounted version

Seal the unused cable gland using the supplied stopper gasket to make sure the device is tight.

→ Unscrew the nut of the cable gland.

→ Remove the transparent disc inside the cable gland.

→ Insert the stopper gasket

→ Screw the nut back.

→ Connect the flow sensor to the remote transmitter according to chap. "8.5".

→ Configure the selectors on the electronic board: see chap. "8.3".

→ Loosen the nuts of the cable glands.

→ Insert each cable through a nut then through the cable gland, using the cable glands as shown in "Fig. 43".

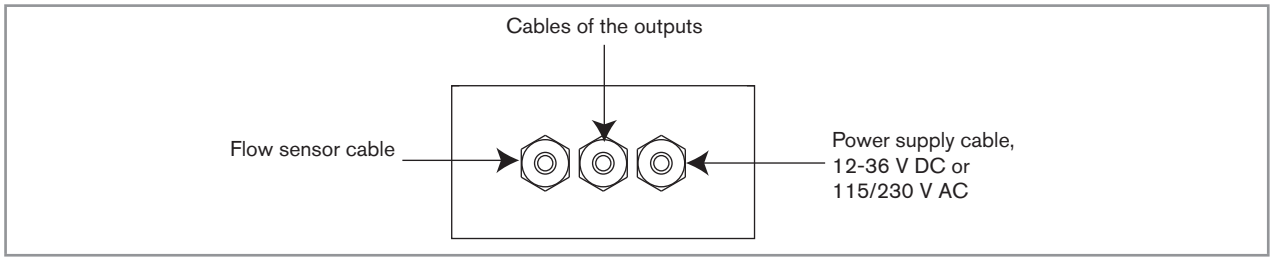

Fig. 43: Using the cable glands

→ Remove the two terminal blocks (marked 4 and 6 in "Fig. 44" chap. "8.7.2" and "Fig. 48" chap. "8.7.3") from the housing.

→ For the versions with relays, insert the cable clips: see "Fig. 25".

→ Depending on the version (with or without relays), wire the device according to chap. "8.7.2" or "8.7.3".

→ Insert the two terminal blocks (marked 4 and 6 in "Fig. 44" chap. "8.7.2" and "Fig. 48" chap. "8.7.3") into their original position.

→ Letting the housing stay completely open, secure the power supply cable, the flow sensor connection cable and, depending on the version, the relay connection cables, with the cable clips.

→ Tighten the cable glands making sure the cable in the housing is long enough to allow complete opening of the housing.

→ Close the cover.

→ Tighten the 4 screws.

→ Put the blanking strips on the housing.

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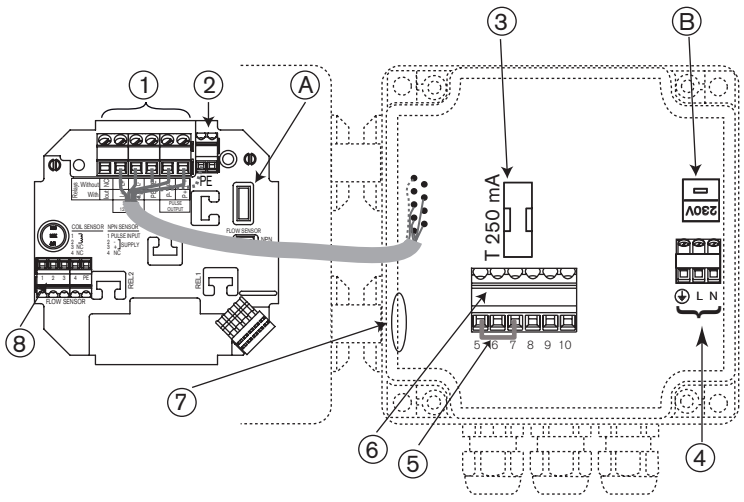
8.7.2. Wiring the 8025, wall-mounted version, 115/230 V AC, without relays

→ Before wiring the device, obey the instructions of chap. "8.7.1".



Switch (A): see chap. "8.3.1"

Switch (B): see chap. "8.3.3"

Terminal block 1

NC: not connected

L+ (red wire, factory wired)

L- (green wire, factory wired)

PE: wiring of the PE between the main board and the protection board

P- (brown wire, factory wired)

P+ (white wire, factory wired)

Terminal block 2 PE

Shield wiring (green/yellow wire, factory wired)

Time-delay fuse 3: fuse to protect the 115 V AC or 230 V AC power supply

Terminal block 4

Wiring of the 115/230 V AC power supply

Jumper wire 5: jumper wire to be removed if the 4-20 mA output is connected

Terminal block 6

Terminal 5: 4-20 mA output

Terminal 6: positive 27 V DC power supply, available to energize an external instrument

Terminal 7: 0V (earth of the power supply available to energize an external instrument)

Terminal 8: cable shields

Terminal 9: negative pulse output

Terminal 10: positive pulse output

Marker 7: all the cables must be fitted here

Connector 8: connection of the flow sensor

Fig. 44: Terminal assignment of a wall-mounted version, 115/230 V AC, without relays

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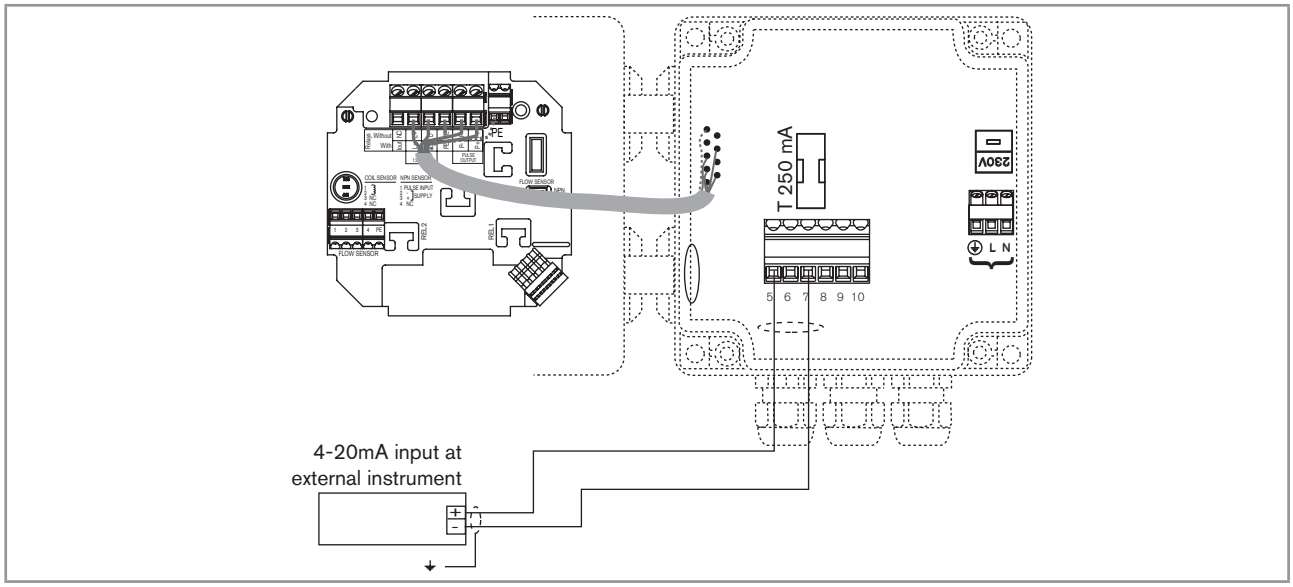

Fig. 45: Wiring of the current output of a wall-mounted version without relays

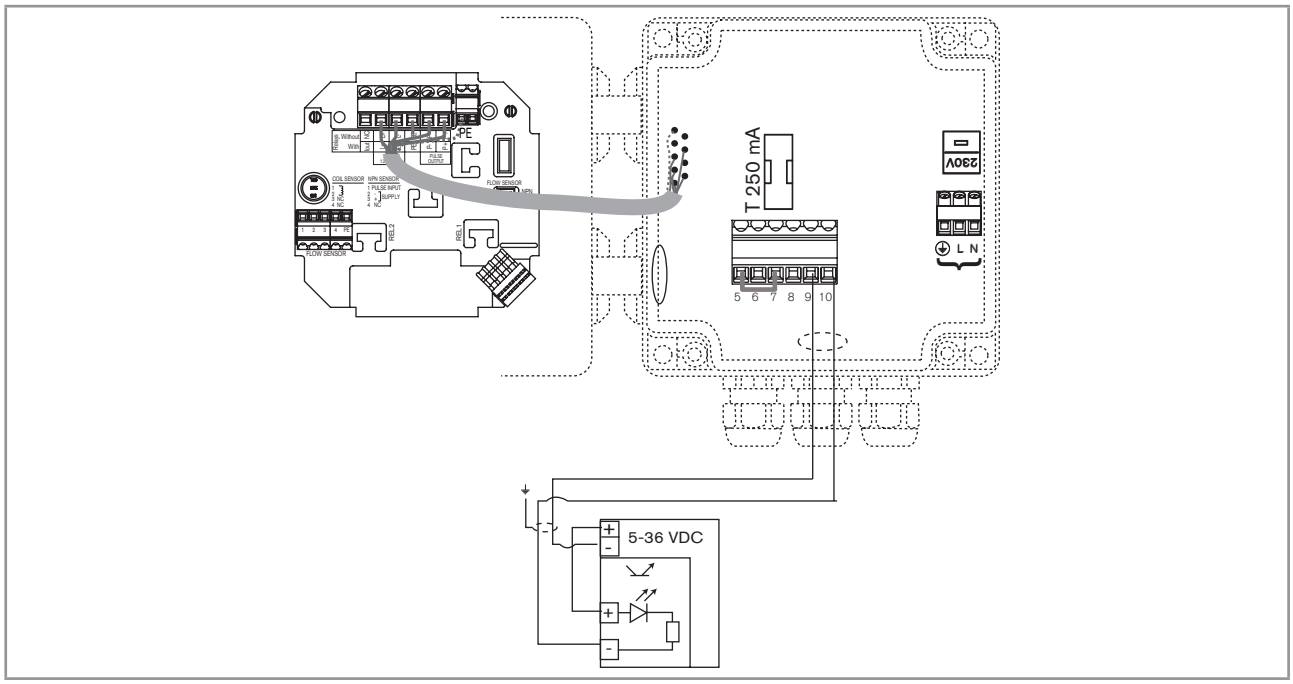

Fig. 46: Wiring in NPN mode of the pulse output of a wall-mounted version without relays

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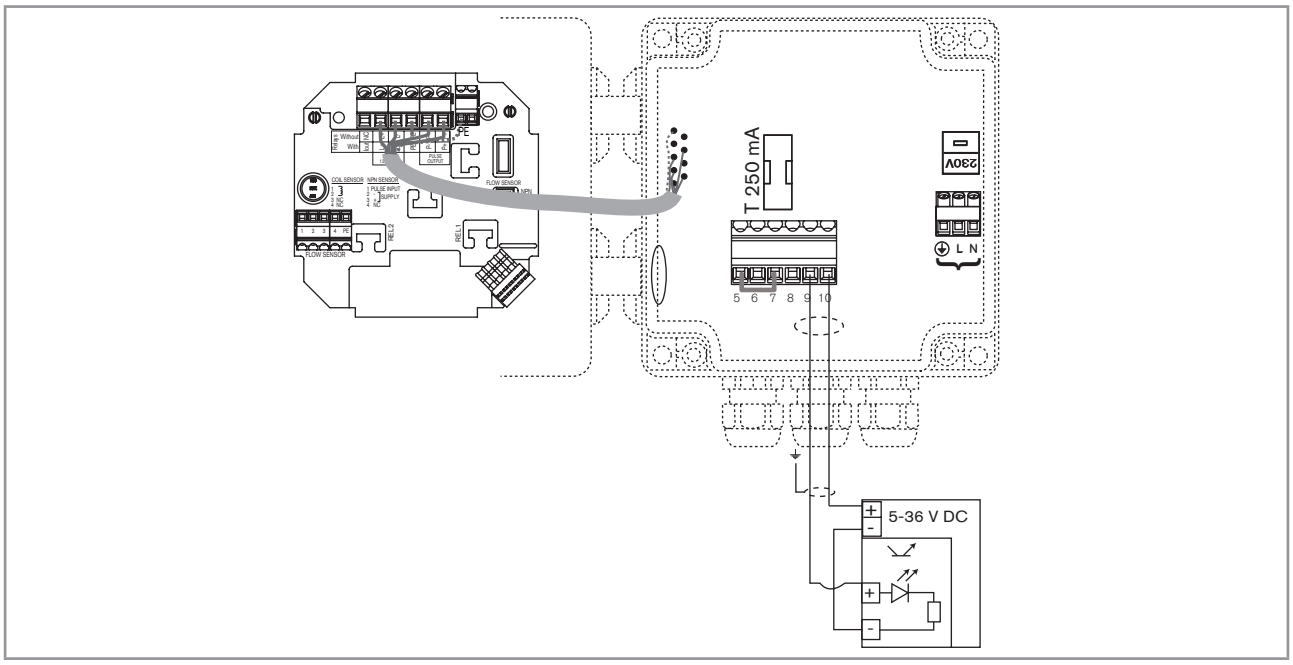

Fig. 47: Wiring in PNP mode of the pulse output of a wall-mounted version without relays

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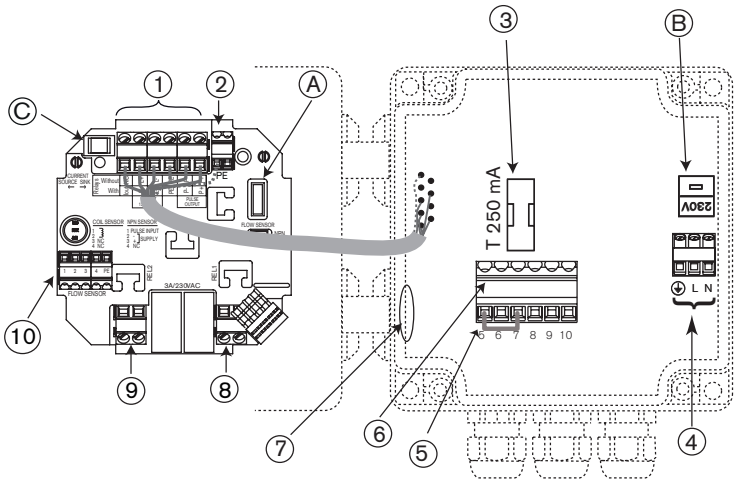
8.7.3. Wiring the 8025, wall-mounted version, 115/230 V AC, with relays

→ Before wiring the device, obey the instructions of chap. "8.7.1".



Switch (A): see chap. "8.3.1"

Switch (B): see chap. "8.3.3"

Switch (C): see chap. "8.3.2"

Terminal block 1

Iout: 4-20 mA output (green wire, factory wired)

L+ (red wire, factory wired)

L- (black wire, factory wired)

PE: wiring of the PE between the main board and the protection board

P- (brown wire, factory wired)

P+ (white wire, factory wired)

Terminal block 2 PE

Shield connection (green/yellow wire, factory wired)

Time-delay fuse 3: fuse to protect the 115 V AC or 230 V AC power supply

Terminal block 4

Wiring of the 115/230 V AC power supply

Jumper wire 5: jumper wire to be removed if the 4-20 mA output is connected

Terminal block 6

Terminal 5: 4-20 mA output

Terminal 6: positive 27 V DC power supply, available to energize an external instrument

Terminal 7: 0V (earth of the power supply available to energize an external instrument)

Terminal 8: cable shields

Terminal 9: negative pulse output

Terminal 10: positive pulse output

Marker 7: all the cables must be fitted here

Terminal block 8: wiring of relay 1, see chap. "8.4.2"

Terminal block 9: wiring of relay 2, see chap. "8.4.2"

Connector 10: connection of the flow sensor

Fig. 48: Terminal assignment of a wall-mounted version, 115/230 V AC, with relays

The wiring of the pulse output of a wall-mounted version with relays is the same as the wiring of a version without relays.

→ Refer to "Fig. 46" and "Fig. 47".

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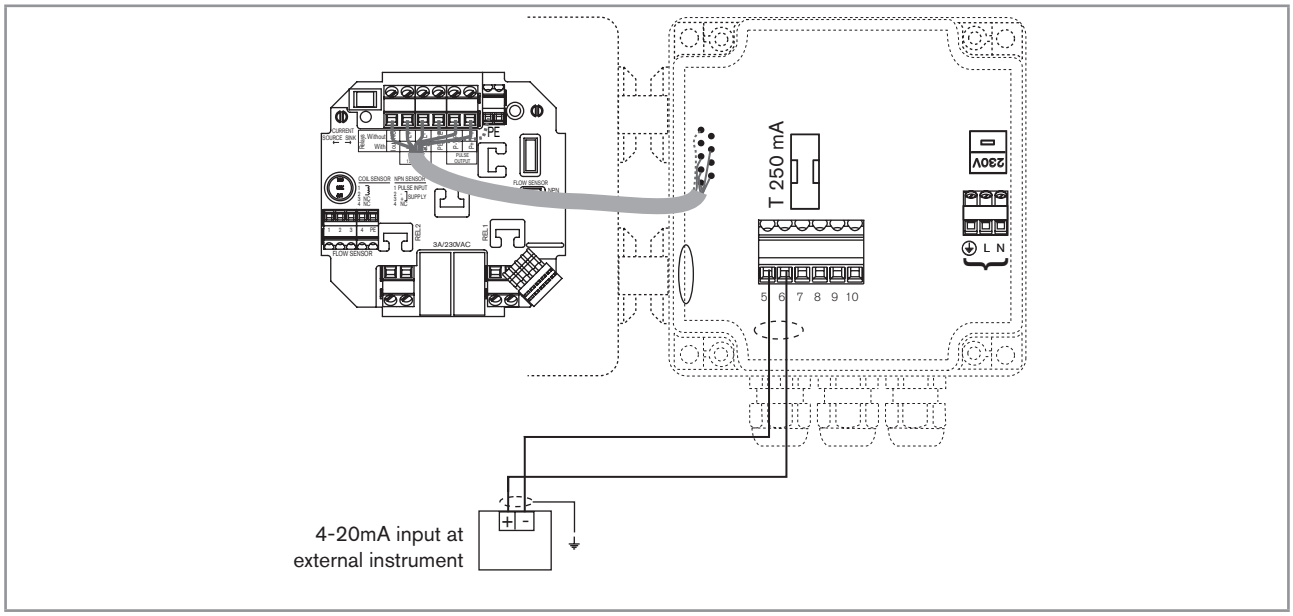

Fig. 49: Wiring in sinking mode of the current output of a wall-mounted version, 115/230 V AC, with relays

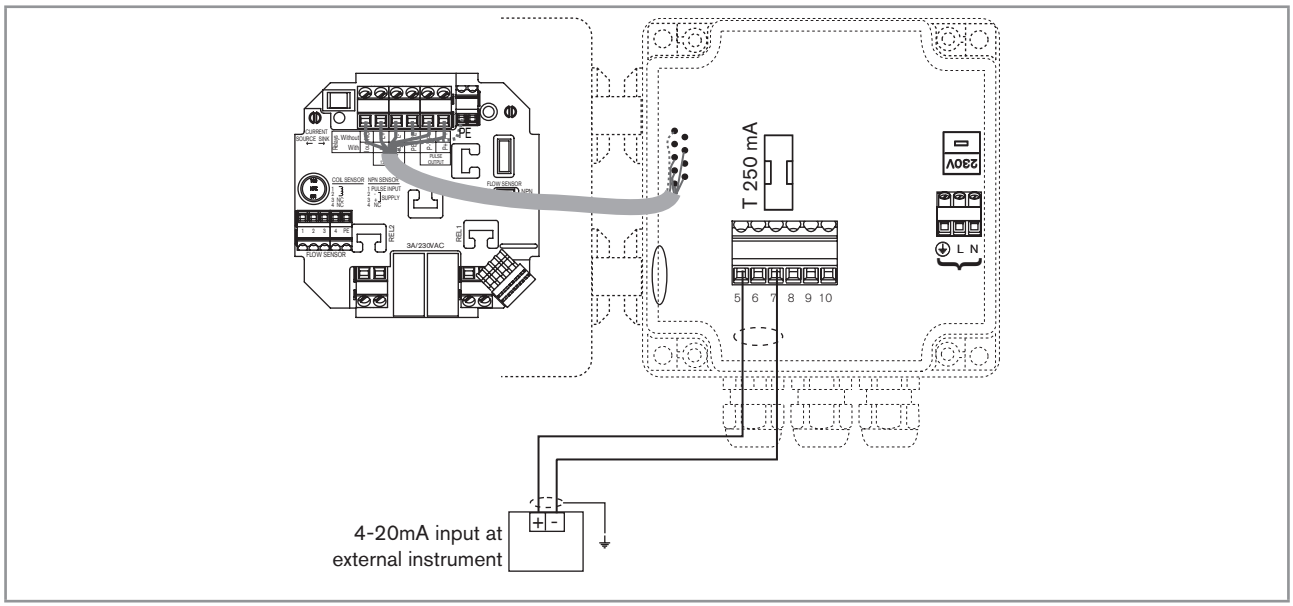

Fig. 50: Wiring in sourcing mode of the current output of a wall-mounted version, 115/230 V AC, with relays

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9. OPERATING AND COMMISSIONING

9.1. Safety instructions

WARNING

Risk of injury due to nonconforming operating.

Non-conforming operating could lead to injuries and damage the device and its surroundings.

- The operators in charge of operating must have read and understood the contents of this manual.
- In particular, observe the safety recommendations and intended use.
- The device/installation must only be operated by suitably trained staff.

WARNING

Danger due to non-conforming commissioning.

Non-conforming commissioning could lead to injuries and damage the device and its surroundings.

- Before commissioning, make sure that the staff in charge have read and fully understood the contents of the manual.
- In particular, observe the safety recommendations and intended use.
- The device / the installation must only be commissioned by suitably trained staff.
- Before commissioning, set the K Factor of the fitting used. See chap. "9.6.3".

9.2. Operating levels of the device

The device has two operating levels: the Process level and the Configuration level.

The Process level makes it possible:

- to read the flow rate measured by the device, the value of the current transmitted on the 4-20 mA analogue output, the values of both the daily and main totalizers;
- to reset the daily totalizer;
- to access the Configuration level.

The Configuration level has two menus (Parameters, Test) and makes it possible:

- to set the device parameters;
- to test some device settings.

Tab. 6: Default settings of the device

Function	Default value
LANGUAGE	English
UNIT of the flow rate	L/min, 1 decimal
UNIT of the totalizers	L
Number of decimal positions	1
4 mA current output	0.000
20 mA current output	100.0
K FACTOR	51.20
FILTER	5
Value of a pulse (PU)	00.05
Unit of the pulse output	L
Relay 1-	40.0
Relay 1+	50.0
Relay 1 inverted	no
Relay 2-	80.0
Relay 2+	90.0
Relay 2 inverted	no

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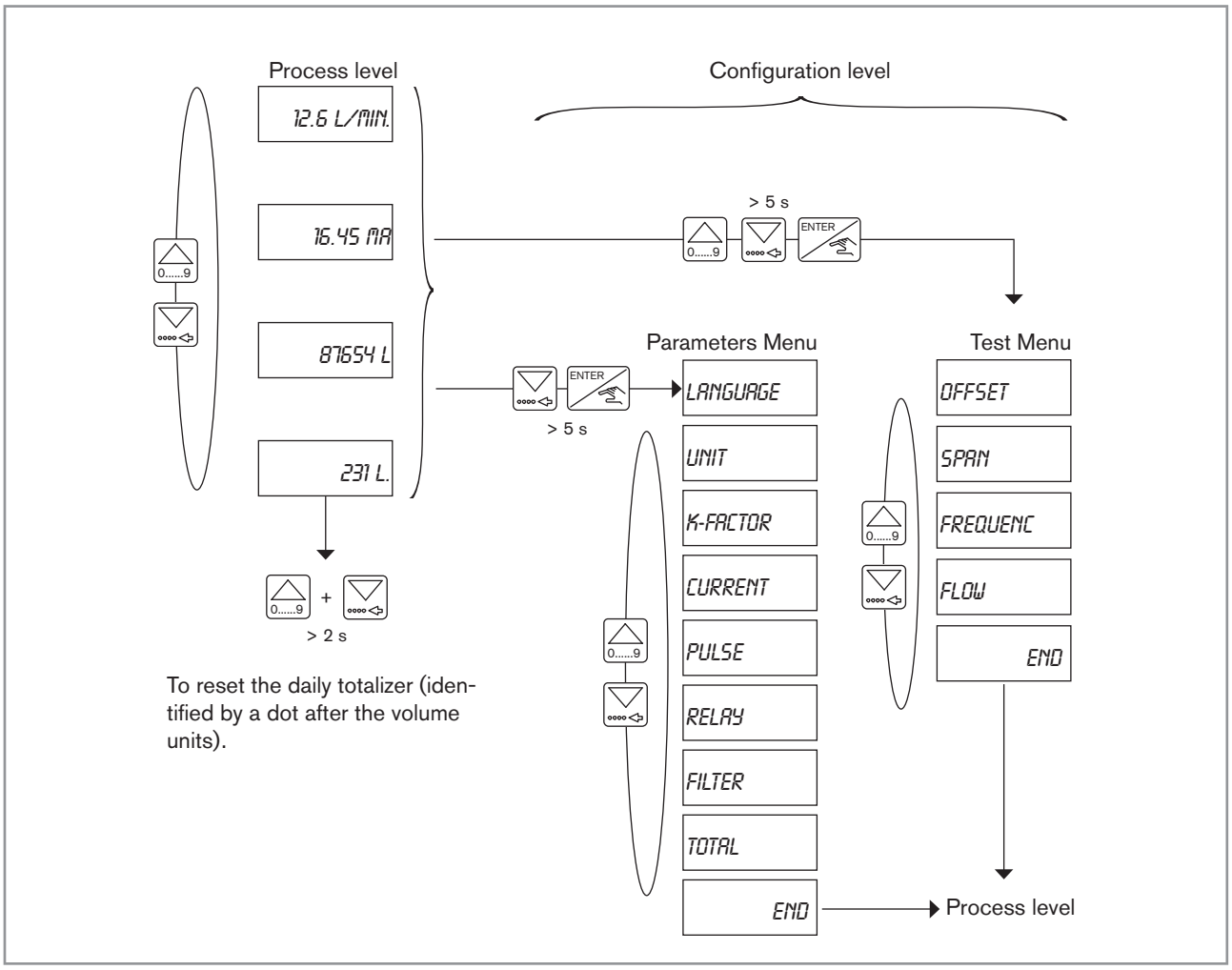

Fig. 51: Diagram of the levels of the device

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9.3. Description of the navigation keys and the status LEDs

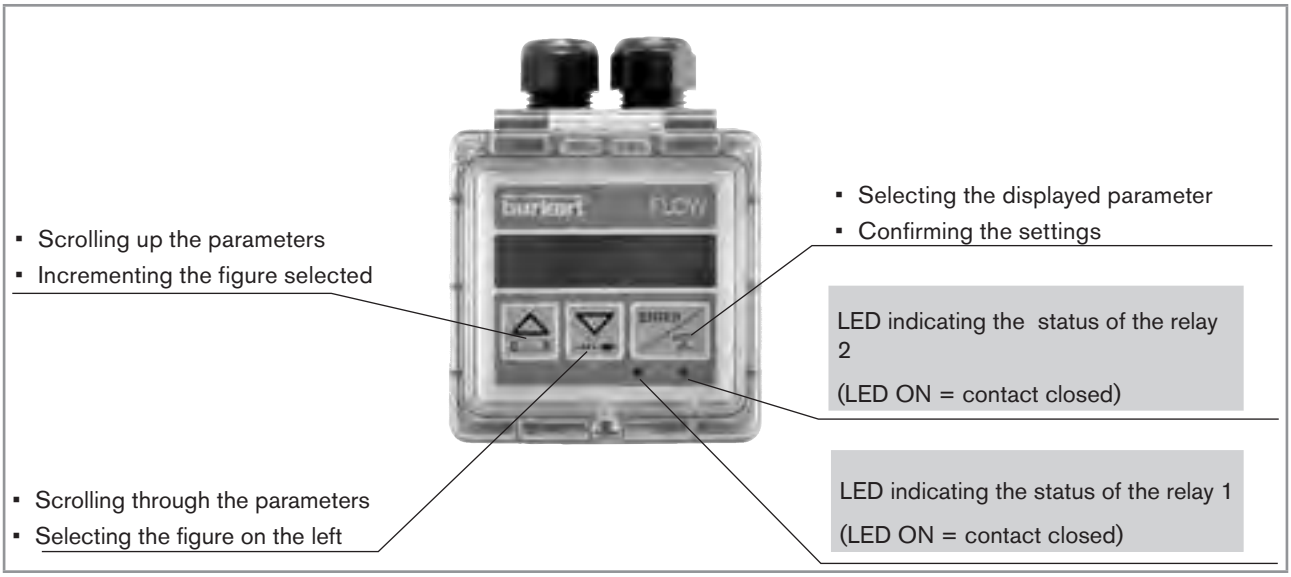

Fig. 52: Description of the display

9.4. Using the navigation keys

You want to...	Press...
move between parameters within a level or a menu.	▪ ▽ to go the next parameter. ▪ △ to go to the previous parameter.
access the Parameters menu.	ENTER + ▽ simultaneously for 5 s, in the Process level
access the Test menu.	△ + ▽ + ENTER simultaneously for 5 s, in the Process level
reset the daily totalizer, from the Process level.	△ + ▽ simultaneously for 2 s, when the daily totalizer is displayed in the Process level
select the displayed parameter.	ENTER
confirm the displayed value.	ENTER
modify a numerical value.	▪ △ to increase the blinking digit. ▪ ▽ to select the digit at the left of the blinking digit. ▪ △ + ▽ to move the decimal point.

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9.5. Details of the Process level

This level is active by default when the device is energized.

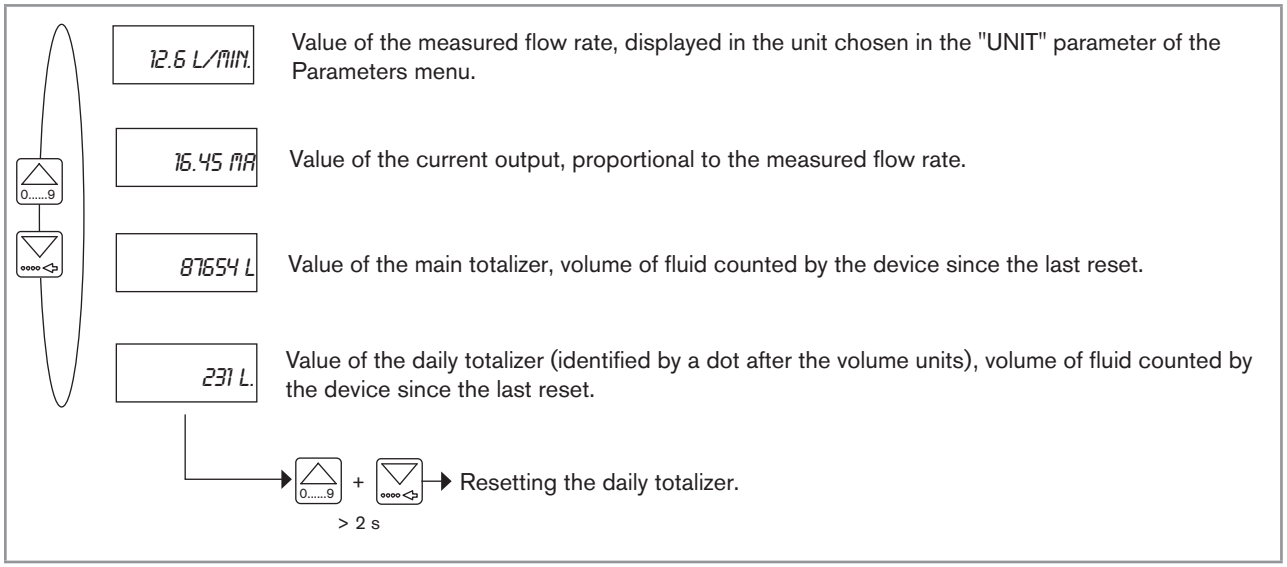

Fig. 53: Diagram of the Process level

9.6. Details of the Parameters menu

To access the Parameters menu, simultaneously press keys ENTER for at least 5 *s*.

This menu comprises the following configurable parameters:

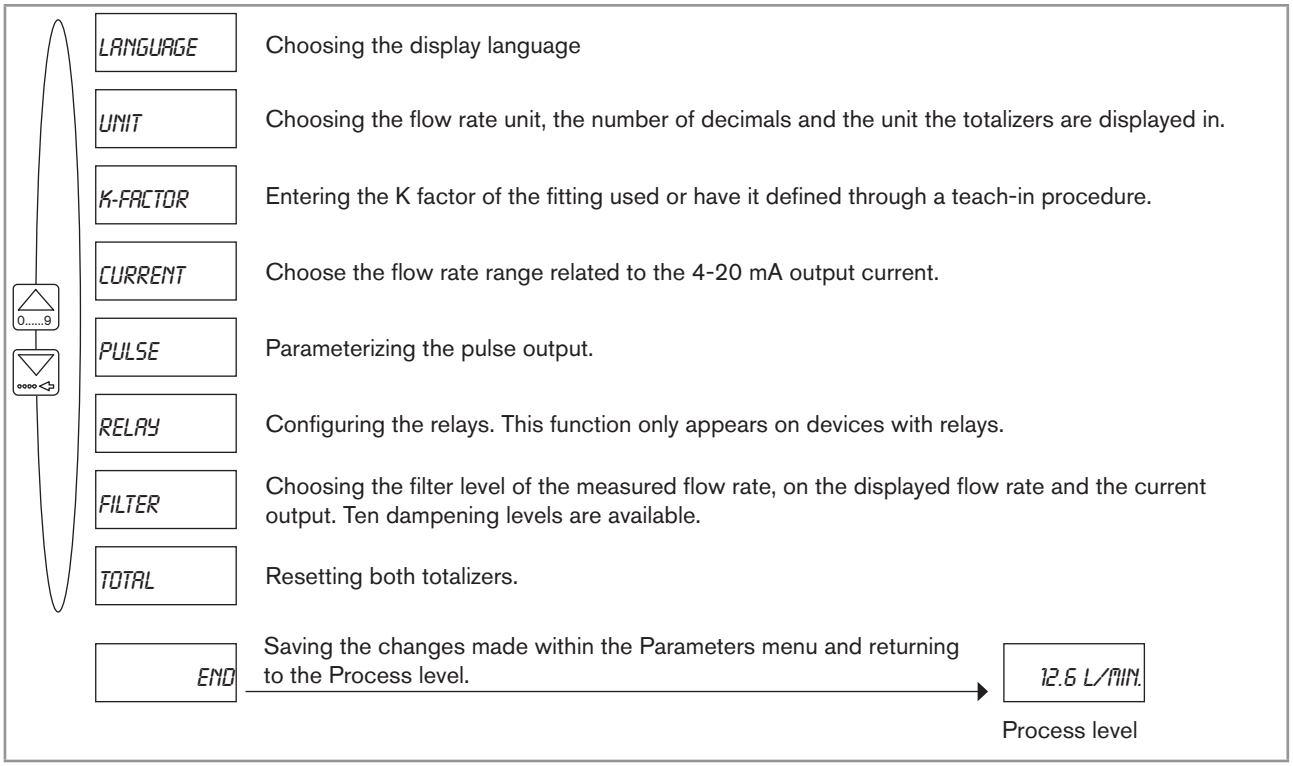

Fig. 54: Diagram of the Parameters menu

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9.6.1. Choosing the display language

When the device is energized for the first time, the display language is English.

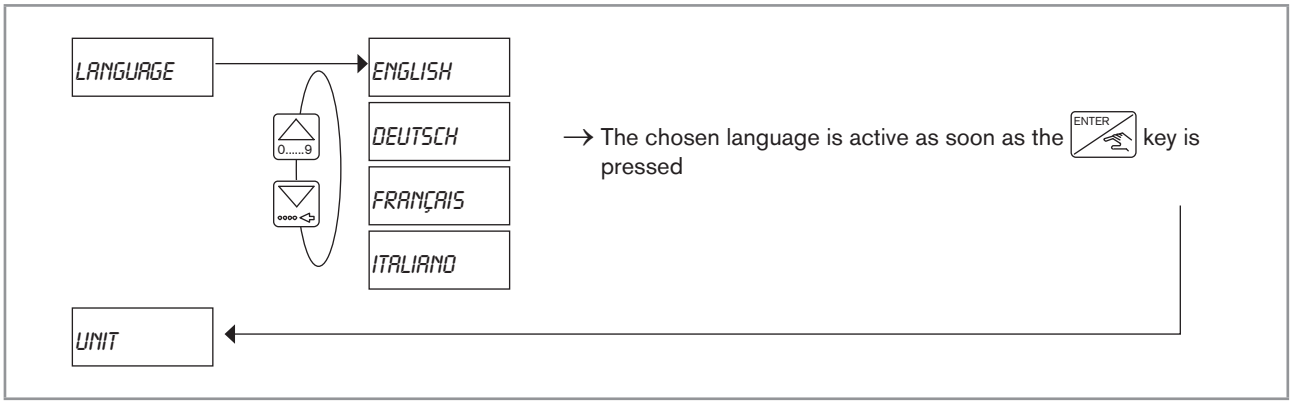

Fig. 55: Diagram of the "LANGUAGE" parameter of the Parameters menu

→ If you do not want to adjust another parameter, go to the "END" parameter of the Parametersmenu and press ENTER to save the settings and go back to the Process level.

9.6.2. Choosing the flow rate units, the number of decimals and the units of the totalizers

The max. flow rate that can be displayed depends on the number of decimals chosen:

- 9999 if the number of decimals = 0.
- 999,9 if the number of decimals = 1.
- 99,99 if the number of decimals = 2.
- 9,999 if the number of decimals = 3.

The max. flow rate that can be displayed by the totalizers depends on the volume unit chosen:

- 9 999 999 if the volume unit chosen is "litre";
- 999 999 if the volume unit chosen is "m³" or "gallon".

- When the flow rate unit is changed convert the flow rate values set within the "CURRENT", "PULSE" and "RELAYS" parameters of the Parameters menu.

The "UNIT" parameter makes it possible to choose:

- the flow rate units;
- a fixed number of decimals (choice 0, 1, 2 or 3) to display the flow rate in the Process level;
- the volume units of the totalizers if the unit previously chosen is in litres, in m³ or in gallons.

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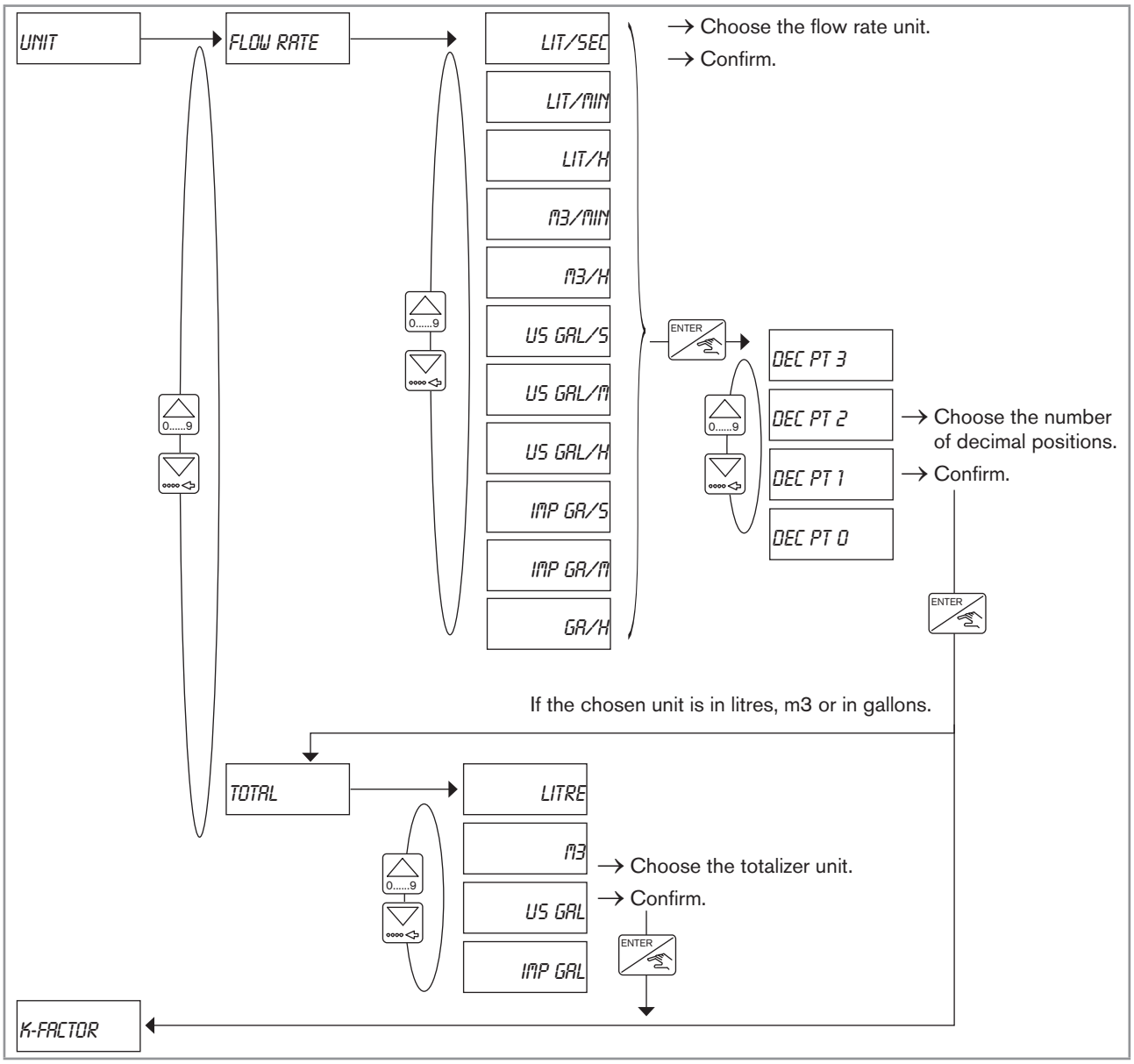

Fig. 56: Diagram of the "UNIT" parameter of the Parameters menu

→ If you do not want to adjust another parameter, go to the "END" parameter of the Parameters menu and press ENTER to save the settings and go back to the Process level.

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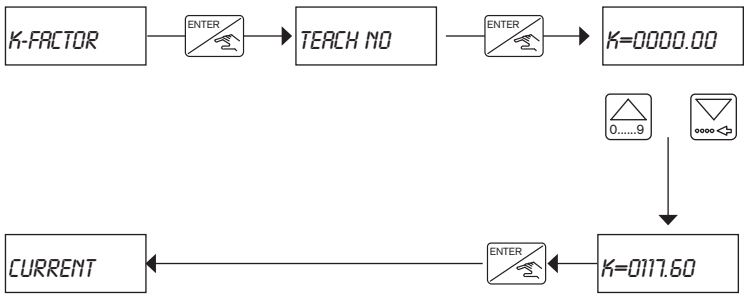
9.6.3. Entering the K factor of the fitting used

The device determines the flow rate in the pipe using the fitting K factor.

The K factor of the fitting used can be entered here. The device may also determine the K factor using a teach-in procedure: see "Fig. 58".

The K factor of the fitting used is in the operating instructions of the fitting.
The operating instructions of the Bürkert fittings can be found on the CD delivered with the device or on the internet at: www.burkert.com.



The display shows the K factor of the fitting, last entered or determined using a Teach-In procedure.

→ Edit the parameter.

→ Enter the K factor (value between 0,0001 and 9999,9) of the fitting used.

→ Confirm the displayed value.

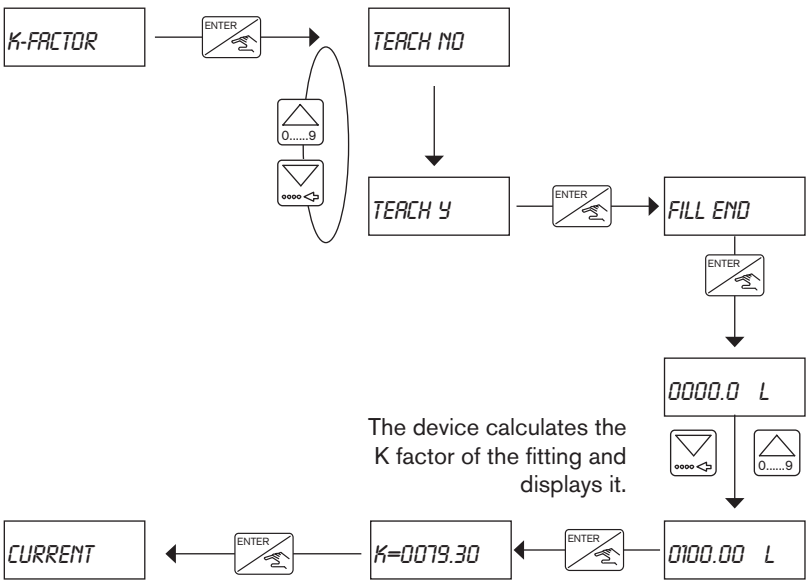
Fig. 57: Entering the K factor of the fitting used

The teach-in is done depending on a known volume.

→ Prepare a tank with a known volume.

→ Stop the fluid circulation.

→ Confirm "TEACH Y.": "FILL END." is displayed.



→ Charge the pipe to fill the tank.

→ When the tank is full, confirm "FILL END"

The device calculates the K factor of the fitting and displays it.

Do not enter a volume value equal to 0,0 because the K Factor calculated would be equal to 0,0 and the device would not operate.

→ Enter the volume (value > 0,0 and ≤ 9999,9) of fluid that passed in the circuit.

→ Confirm.

Fig. 58: Teach-in procedure depending on a volume

→ If you do not want to adjust another parameter, go to the "END" parameter of the Parameters menu and press ENTER to save the settings and go back to the Process level.

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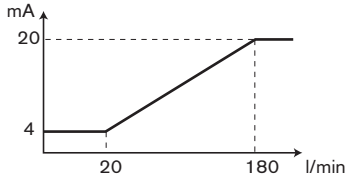
9.6.4. Configuring the current output

The 4-20 mA output provides an electrical current, the value of which reflects the flow rate measured by the device.
Example of relation between the measuring range and the current output:



→ To invert the output signal, give a lower flow rate value to the 20 mA current value than to the 4 mA current value.

→ To disable the current output, set both range bounds, 4 and 20 mA, to zero. In this case the output delivers a constant current of 4 mA.

The units and number of decimal digits are those set within the "UNIT" parameter for the display of the current output values.

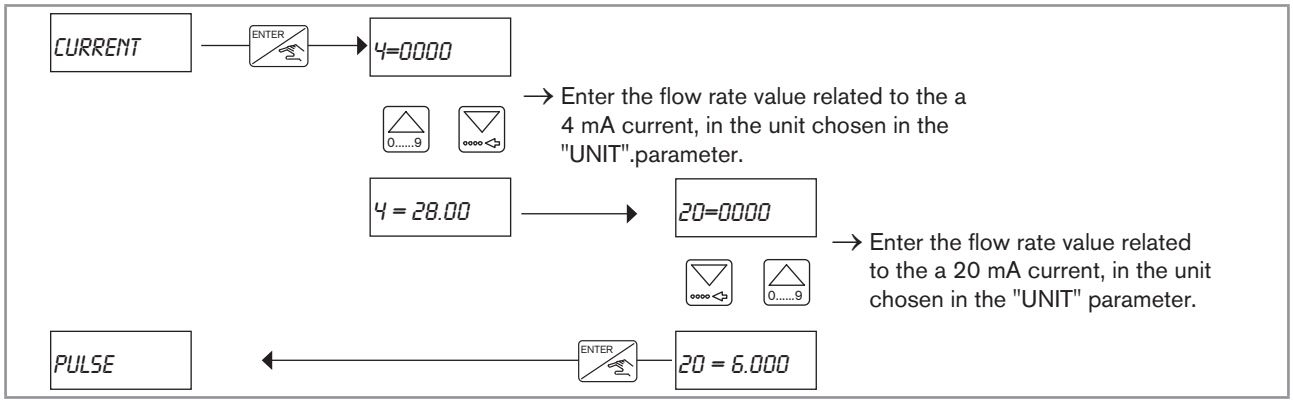


Fig. 59: Configuration of the current output

→ If you do not want to adjust another parameter, go to the "END" parameter of the Parameters menu and press ENTER to save the settings and go back to the Process level.

9.6.5. Configuring the pulse output

This parameter makes it possible to enter the volume of liquid related to a pulse.

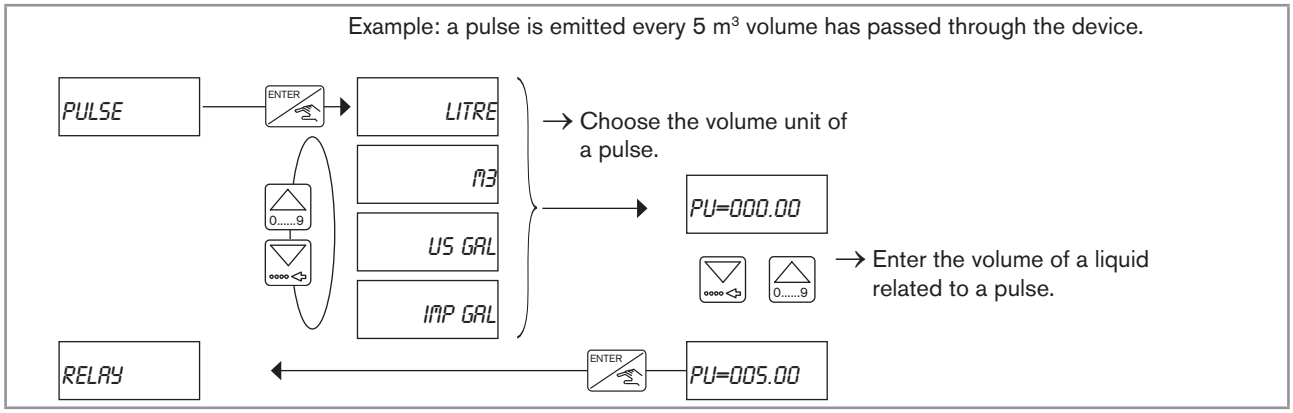


Fig. 60: Configuration of the pulse output

If the message "PU H LIM" or "PU L LIM" is displayed, see chap. "10.3".

→ If you do not want to adjust another parameter, go to the "END" parameter of the Parameters menu and press ENTER to save the settings and go back to the Process level.

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9.6.6. Configuring the relays

This parameter makes it possible to set the switching thresholds and the operating behaviour, inverted or not, of each relay.

Enter values such as 1- ≤ 1+ and/or 2- ≤ 2+.

Both relays work in an hysteresis operating.

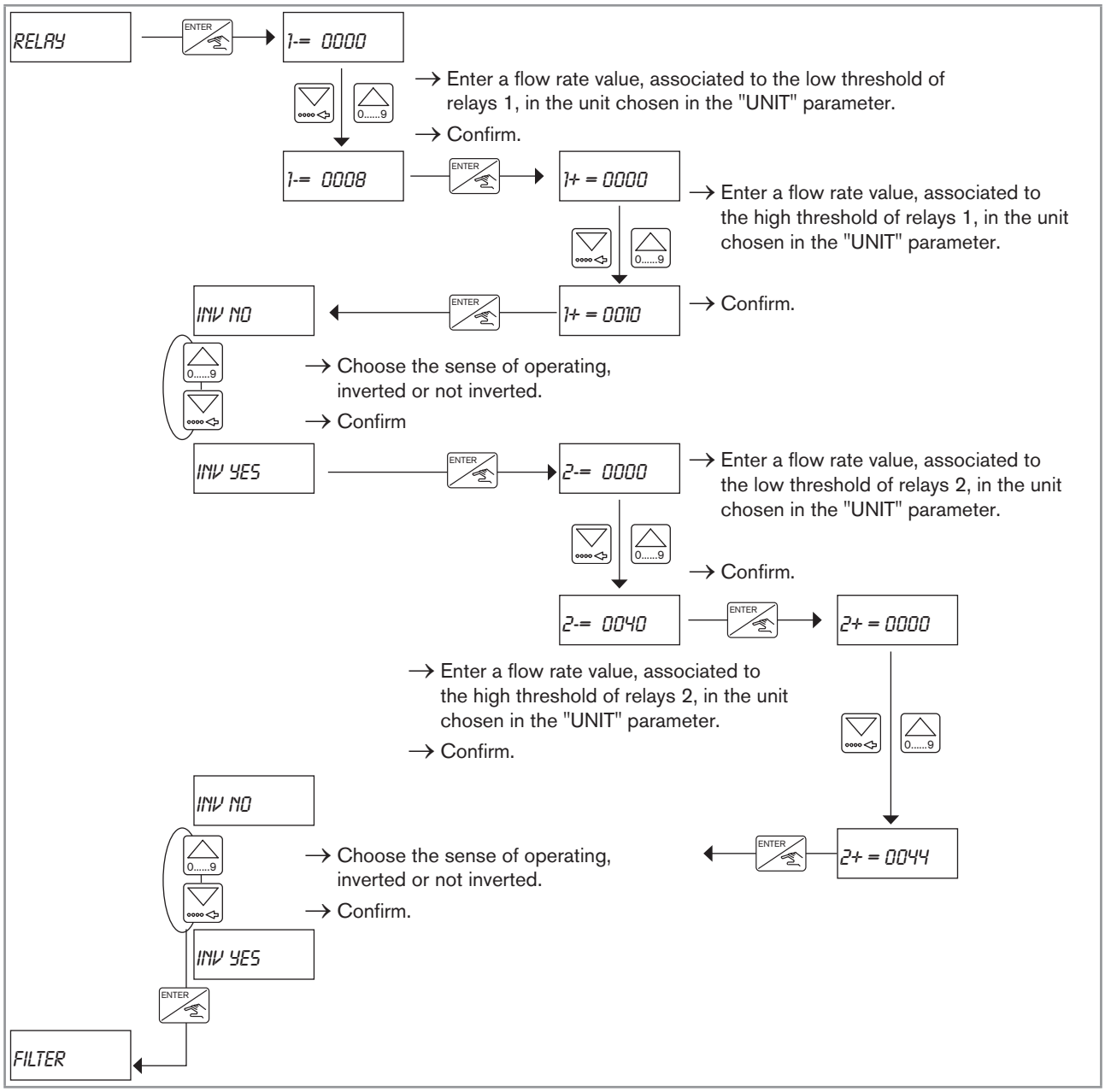

Fig. 61: Configuration of the relays threshold in hysteresis operating

→ If you do not want to adjust another parameter, go to the "END" parameter of the Parameters menu and press ENTER to save the settings and go back to the Process level.

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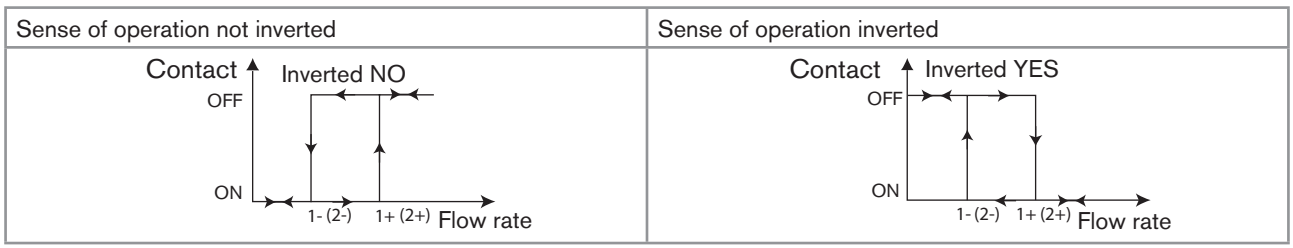

Fig. 62: Hysteresis operating

9.6.7. Configuring the filter of the measured flow rate

This parameter makes it possible to dampen the fluctuations:

- of the display;
- of the current output.

Ten filters are available.

The following table gives the response time for each filter (10% to 90%):

FILTER	Response time		FILTER	Response time
0	0,15 s		5	6 s
1	0,7 s		6	10 s
2	1,4 s		7	19 s
3	2,5 s		8	33 s
4	3,5 s		9	50 s

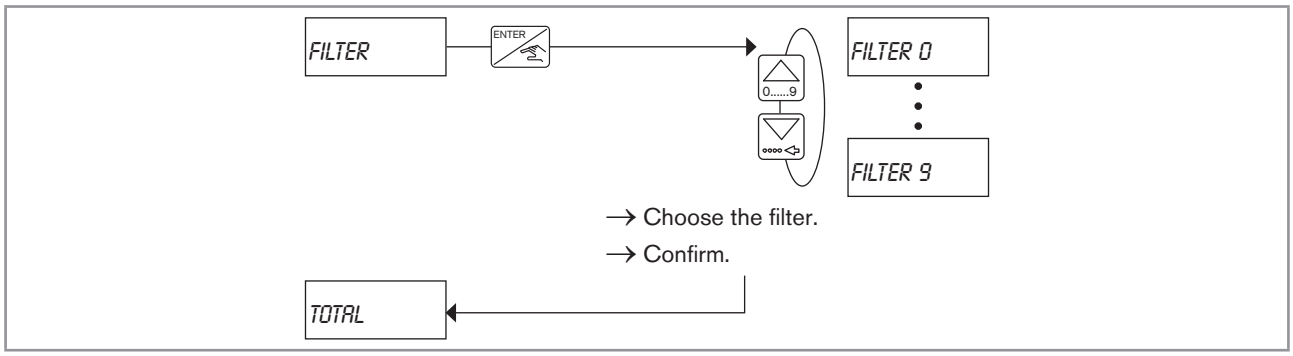

Fig. 63: Diagram of the "FILTER" parameter of the Parameters menu

→ If you do not want to adjust another parameter, go to the "END" parameter of the Parameters menu and press ENTER to save the settings and go back to the Process level.

9.6.8. Resetting both totalizers

This parameter makes it possible to reset both totalizers.

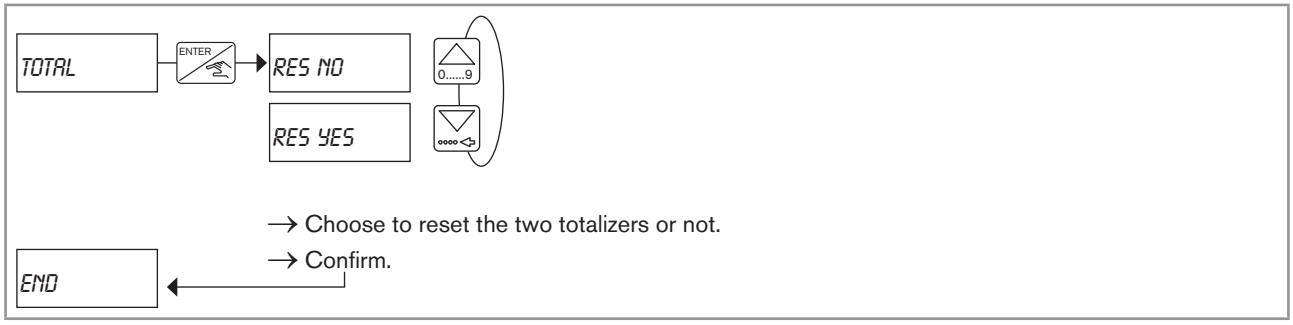

Fig. 64: Diagram of the "TOTAL" parameter of the Parameters menu

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The daily totalizer can be reset from the Process level. See chap. "9.4".

→ If you do not want to adjust another parameter, go to the "END" parameter of the Parameters menu and press ENTER to save the settings and go back to the Process level.

9.7. Details of the Test menu

To access the Test menu, simultaneously press keys 0.....9 and ENTER for at least 5 s.

This menu comprises the following configurable parameters:

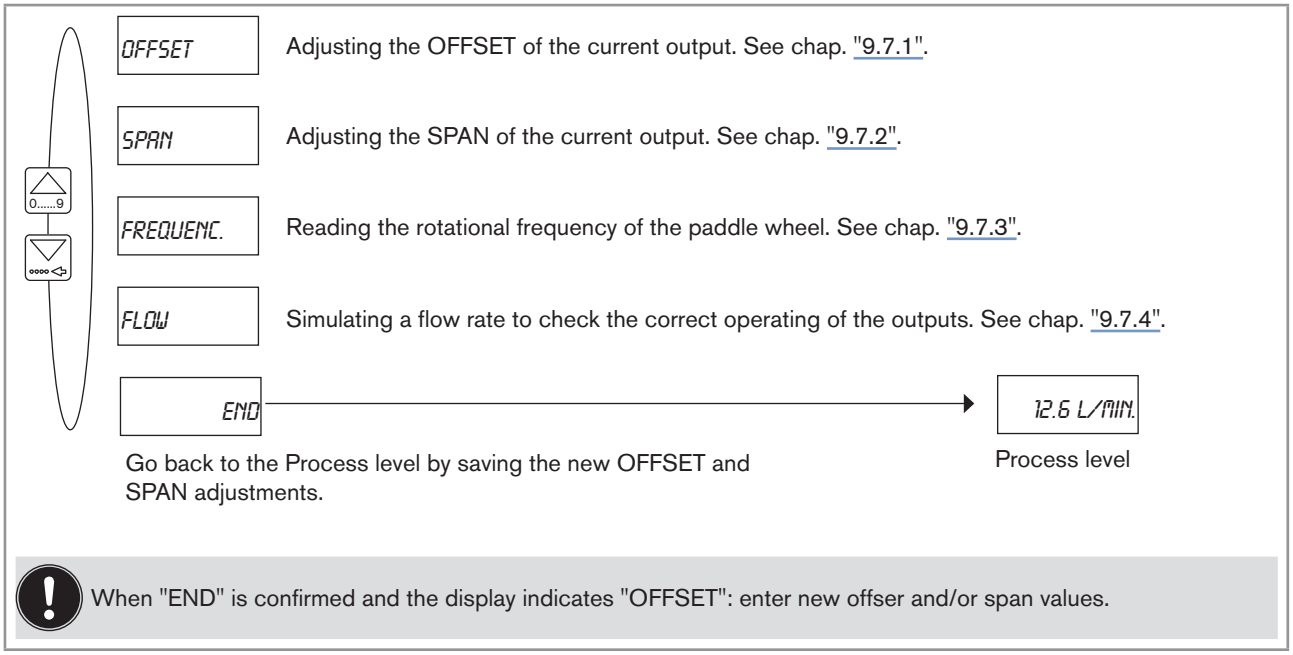

Fig. 65: Diagram of the Test menu

9.7.1. Adjusting the OFFSET of the current output

This parameter makes it possible to adjust the 4 mA current value transmitted on the 4-20 mA output.

→ Connect a multimeter into the measurement loop.

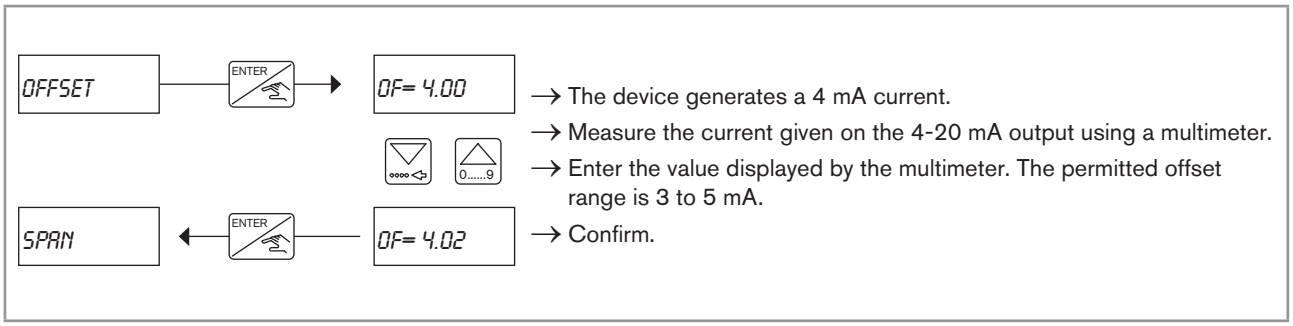

Fig. 66: Adjustment of the OFFSET

→ Adjust the default 20 mA current value: see chap. "9.7.2".

The adjusted value of the default 4 mA value (parameter "OFFSET") is taken into account when leaving the parameter "SPAN".

→ If you do not want to adjust another parameter, go to the "END" parameter of the Test menu and press ENTER to save the settings and go back to the Process level.

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9.7.2. Adjusting the SPAN of the current output

This parameter makes it possible to adjust the 20 mA current value transmitted on the 4-20 mA output.

→ Connect a multimeter into the measurement loop.

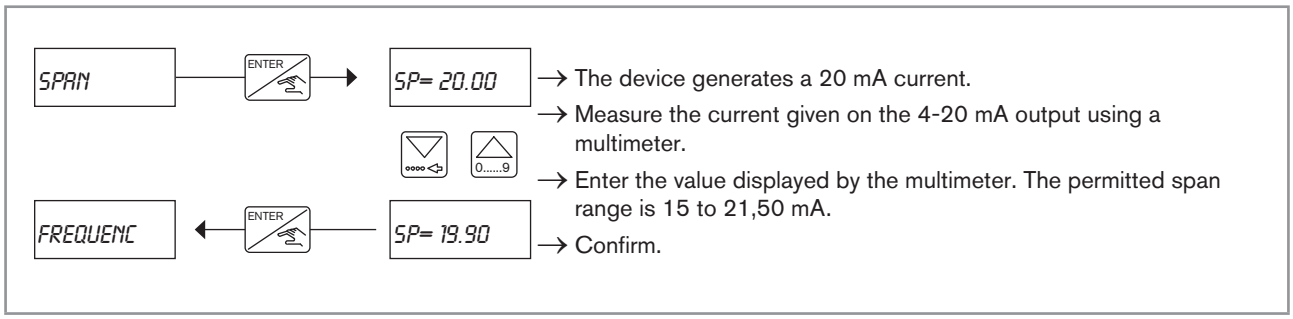

Fig. 67: Adjustment of the SPAN

→ If you do not want to adjust another parameter, go to the "END" parameter of the Test menu and press ENTER to save the settings and go back to the Process level.

9.7.3. Reading the rotational frequency of the paddle wheel

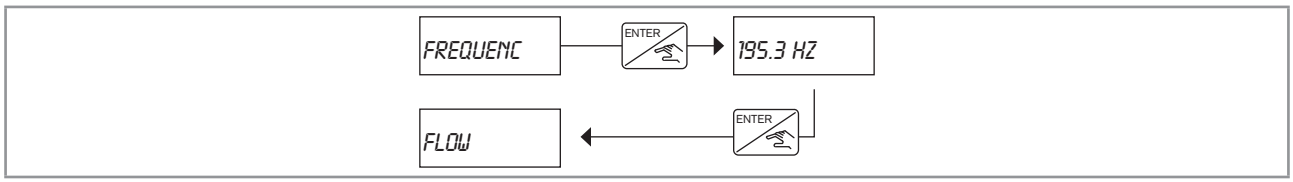

Fig. 68: Diagram of the "FREQUENC." parameter of the Test menu

→ If you do not want to adjust another parameter, go to the "END" parameter of the Test menu and press ENTER to save the settings and go back to the Process level.

9.7.4. Checking the outputs behaviour

This parameter makes it possible to simulate a flow rate in order to check that the outputs are behaving as expected by the configuration made.

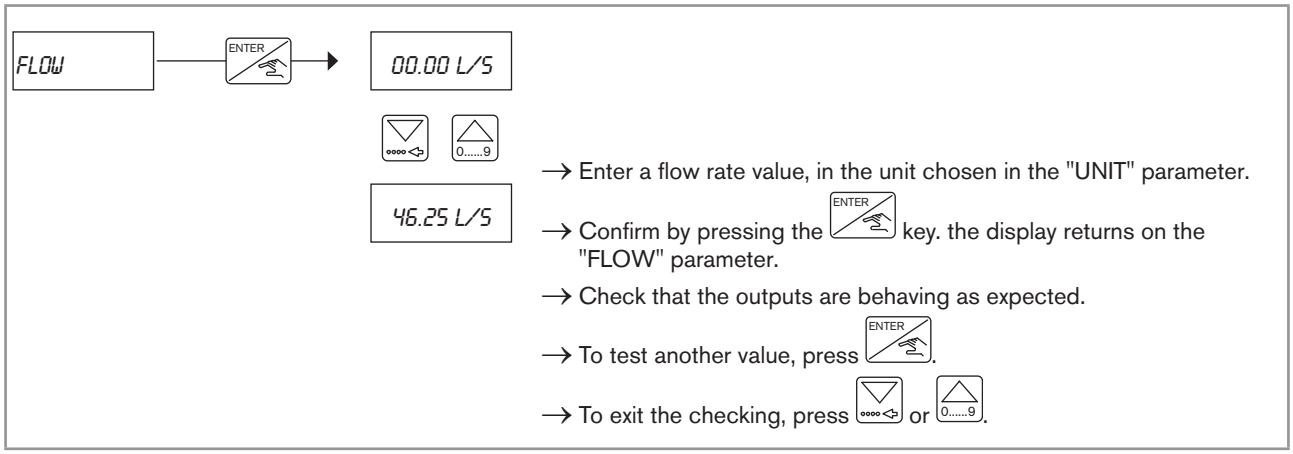

Fig. 69: Diagram of the "FLOW" parameter of the Test menu

→ If you do not want to adjust another parameter, go to the "END" parameter of the Test menu and press ENTER to save the settings and go back to the Process level.

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10. MAINTENANCE AND TROUBLESHOOTING

10.1. Safety instructions

DANGER

Danger due to electrical voltage.
- Shut down the electrical power source of all the conductors and isolate it before carrying out work on the system.
- Observe all applicable accident protection and safety regulations for electrical equipment.

Risk of injury due to high pressure in the installation.
- Stop the circulation of fluid, cut off the pressure and drain the pipe before loosening the process connections.

Risk of injury due to high fluid temperatures.
- Use safety gloves to handle the device.
- Stop the circulation of fluid and drain the pipe before loosening the process connections.

Risk of injury due to the nature of the fluid.
- Respect the prevailing regulations on accident prevention and safety relating to the use of hazardous products.

WARNING

Risk of injury due to nonconforming maintenance.
- Maintenance must only be carried out by qualified and skilled staff with the appropriate tools.
- Guarantee a defined or controlled restarting of the process after a power supply interruption.

10.2. Cleaning the device

The device can be cleaned with a cloth dampened with water or a detergent compatible with the materials the device is made of.

Please feel free to contact your Bürkert supplier for any additional information.

10.3. If you encounter problems

Message displayed	Possible cause	Recommended action
ERROR 3	Memory read error: the user settings are lost.	→ Switch the device off. → Switch the device on. → If the message is still displayed, press the ENTER key to acknowledge the error: the device operates with the default settings. → Adjust the device again. → If the message appears frequently, send the device back to your supplier.
ERROR 4	Memory read error: the totalizer values are lost.	→ Press the ENTER key to acknowledge the error: the values of the totalizers are set to those of the last start of the device. → Check the values of the totalizers.
ERROR 5	Memory read error: the user settings and the totalizer values are lost.	→ Press the ENTER key to acknowledge the error: the device operates with the default settings and the values of the totalizers are set to those of the last start of the device. → Adjust the device again. → Check the values of the totalizers. → If the message appears frequently, send the device back to your supplier.
ERROR 6	Memory read error: the totalizer values are lost.	→ Press the ENTER key to acknowledge the error: the totalizers are reset.

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Message displayed	Possible cause	Recommended action
ERROR 7	Memory read error: the user settings and the totalizer values are lost.	→ Press the ENTER key to acknowledge the error: the totalizers are reset. → Send the device back to your supplier.
PWR FAIL	The supply voltage is too low. ▪ The voltage at the device terminals is lower than 12 V. ▪ The impedance of the current measurement loop is too high (see chap. "6.5").	→ Adjust the supply voltage so that the voltage at the device terminals is between 12 V and 36 V.
PU H LIM	The pulse value times the K factor of the device is > 1000000. The entered volume for a pulse is too high.	→ Enter a lower volume / pulse. See chap. "9.6.5". → Check the K factor value. See chap. "9.6.3".
PU L LIM	The pulse value times the K factor of the device is < 1. The entered volume for a pulse is too low.	→ Enter a higher volume / pulse. See chap. "9.6.5". → Check the K factor value. See chap "9.6.3".

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11. SPARE PARTS AND ACCESSORIES

ATTENTION

Risk of injury and/or damage caused by the use of unsuitable parts.

Incorrect accessories and unsuitable replacement parts may cause injuries and damage the device and the surrounding area.

- Use only original accessories and original replacement parts from Bürkert.

The defective electronic board or housing of your device can be replaced.

- Contact the local Bürkert office.

11.1. Spare parts 8025, compact version

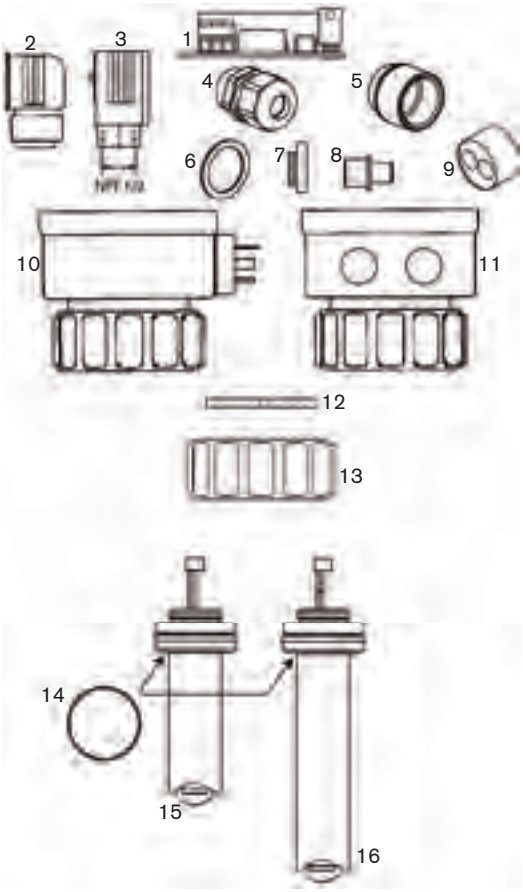

Fig. 70: Exploded view of the spare parts of a 8025, compact version

Position Fig. 70	Designation	Order code
1	115/230 V AC supply voltage board + replacement instructions	553168
2	Female connector with cable gland (type 2508)	438811
3	Female connector type 2509 with NPT 1/2 " reduction	162673
4+6+7+9	Set including: ▪ 2 M20*1.5 cable glands ▪ 2 neoprene flat seals for cable gland or plug ▪ 2 M20*1.5 screw plugs ▪ 2 2*6 mm multi-way seals	449755

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Position Fig. 70	Designation	Order code
5+6+7	Set including: ▪ 2 M20*1.5 / NPT1/2" reductions (with mounted seals) ▪ 2 neopren flat seals for the screw plug ▪ 2 M20*1.5 screw plugs	551782
8+9+14	Set including: ▪ 1 M20*1.5 cable gland stopper gasket ▪ 1 2*6 mm multi-way seal for a cable gland ▪ 1 black EPDM seal for the flow sensor ▪ 1 mounting instruction sheet	551775
10 + 2	Housing with female connector type 2508, snap ring and nut	425524
11	Housing for 2 M20*1.5 cable glands, snap ring and nut	425526
12	Snap ring	619205
13	Nut	619204
14	Set including: ▪ 1 FKM green seal ▪ 1 EPDM black seal	552111
15	Flow sensor (coil) for DN15 to DN100 (1/4" - 4") pipes + replacement instructions	633366
	Flow sensor (Hall) for DN15 to DN100 (1/4" - 4") pipes + replacement instructions	418316
16	Flow sensor (coil) for DN ≥ 100 (≥ 5") + replacement instructions	634757
	Flow sensor (Hall) for DN ≥ 100 (≥5") + replacement instructions	418324
	Set with 8 FLOW foils	553191

11.2. Spare parts 8035

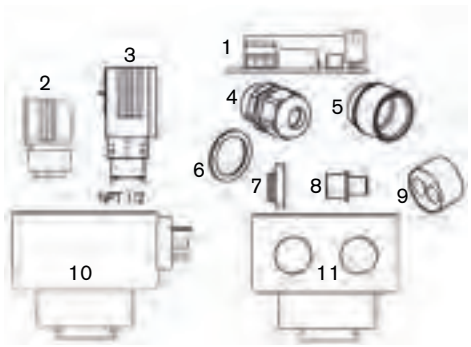

Fig. 71: Exploded view of the spare parts of a 8035

Position Fig. 71	Designation	Order code
1	115/230 V AC supply voltage board + replacement instructions	553168
2	Female connector with cable gland (type 2508)	438811
3	Female connector type 2509 with NPT 1/2 " reduction	162673
4+6+7+9	Set including: ▪ 2 M20*1.5 cable glands ▪ 2 neoprene flat seals for cable gland or plug ▪ 2 M20*1.5 screw plugs ▪ 2 2*6 mm multi-way seals	449755

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Position Fig. 71	Designation	Order code
5+6+7	Set including: ▪ 2 M20*1.5 / NPT1/2" reductions (with mounted seals) ▪ 2 neopren flat seals for the screw plug ▪ 2 M20*1.5 screw plugs	551782
8+9	Set including: ▪ 1 M20*1.5 cable gland stopper gasket ▪ 1 2*6 mm multi-way seal for a cable gland ▪ 1 black EPDM seal ▪ 1 mounting instruction sheet	551775
10+2	Housing with female connector type 2508, coil function	425246
11	Housing for 2 M20*1.5 cable glands, coil function	425247
11	Housing for 2 M20*1.5 cable glands, Hall function	425248
	Set with 8 FLOW foils	553191

11.3. Spare parts, 8025 panel-mounted version

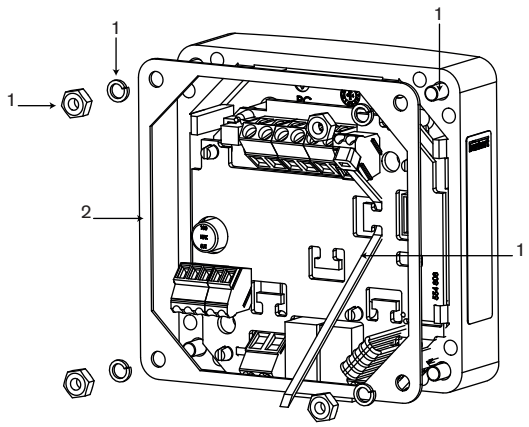

Fig. 72: Exploded view of the spare parts of a 8025 panel-mounted version

Position Fig. 72	Designation	Order code
1	Mounting set (screws, washers, nuts, cable clips)	554807
2	Seal	419350
	Set with 8 FLOW foils	553191

11.4. Spare parts, 8025 wall-mounted version

Designation	Order code
115/230 V AC supply voltage board + replacement instructions	555722

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12. PACKAGING, TRANSPORT

NOTE

Damage due to transport

Transport may damage an insufficiently protected device.

- Transport the device in shock-resistant packaging and away from humidity and dirt.
- Do not expose the device to temperatures that may exceed the admissible storage temperature range.
- Protect the electrical interfaces using protective plugs.

13. STORAGE

NOTE

Poor storage can damage the device.

- Store the device in a dry place away from dust.
- Storage temperature of the device:

- 8025 compact, 115/230 V AC, not UR or CSA recognized: 0 to 50 °C
- 8035 compact, 115/230 V AC, not UR or CSA recognized: 0 to 50 °C
- other versions, not UR or CSA recognized: 0 to 60 °C
- UR and CSA recognized versions: 0 to 40 °C.

14. DISPOSAL OF THE PRODUCT

→ Dispose of the device and its packaging in an environmentally-friendly way.

Note

Comply with the national and/or local regulations which concern the area of waste disposal.

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